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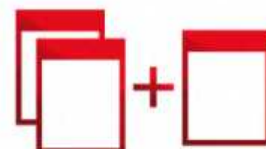
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**12
ISSUES**

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ANDY McNAMARA
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A New Age Of Gaming

Finding reasons why virtual reality will fail is easy, from “It happened before in the ‘90s and it was awful” to “No one will wear that unit on their heads,” and all the shortcomings in-between. You can tire yourself out just thinking about them. I know this first-hand, because I have rattled off the reasons myself and been bombarded by them from those who choose not to believe.

But I’ve played the Oculus Rift, PlayStation VR, and HTC Vive, and I believe this time will be different. While I’ve had some bad experiences, just like there are in any entertainment medium, many VR sessions have left me not only with a sense of wonder, but also a desire to see and do more in these worlds. Without a doubt, VR is one of the most compelling gaming experiences I’ve had in years.

Virtual reality is hard to explain. The sense of “presence” isn’t something you can just tell someone about and have them fully understand. And yes, you can still nitpick the tech. You are not stepping into crystal-clear, perfectly detailed alternate universes, but this is the first step in that direction. The experience these headsets deliver today, in this “year of VR” as we so boldly call it, is breathtaking and compelling despite its current limitations. More importantly, 2016 is just the start of the VR evolution. Today’s headsets, while leaps and bounds ahead of products even three years ago, are merely the opening salvo of a growing and transforming technology.

In this issue we explore the new technologies you will use to enter this brave and exciting new world later this year and outline the games on the horizon. We played extended sessions with several titles, in particular *Adr1ft* and *Edge of Nowhere*. It is clear developers are still learning this new technology, but already the games are engrossing and singular.

VR isn’t going to be for everyone in its beginnings, but I hope you explore the issue and eventually get a chance to try VR for yourself. I don’t think you will regret it; I know I’m a believer. I haven’t felt this level of wonder in gaming in years, and I hope it doesn’t stop. While today is amazing, I can’t imagine what tomorrow will bring.

Cheers,



The Year Of VR

Many in the video game industry think virtual reality is the future of interactive digital experiences. This month, we examine what that future looks like. We tried out all the major VR headsets, played all the major games, and talked with all the major players about what very well could be the future of video games.



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regulars

» 4 Feedback

This month readers thank us for giving some love to Nintendo and share their most embarrassing gamertags and usernames. We also talk about our recent first-ever DLC-focused cover issue with Destiny: The Taken King.

» 8 Connect

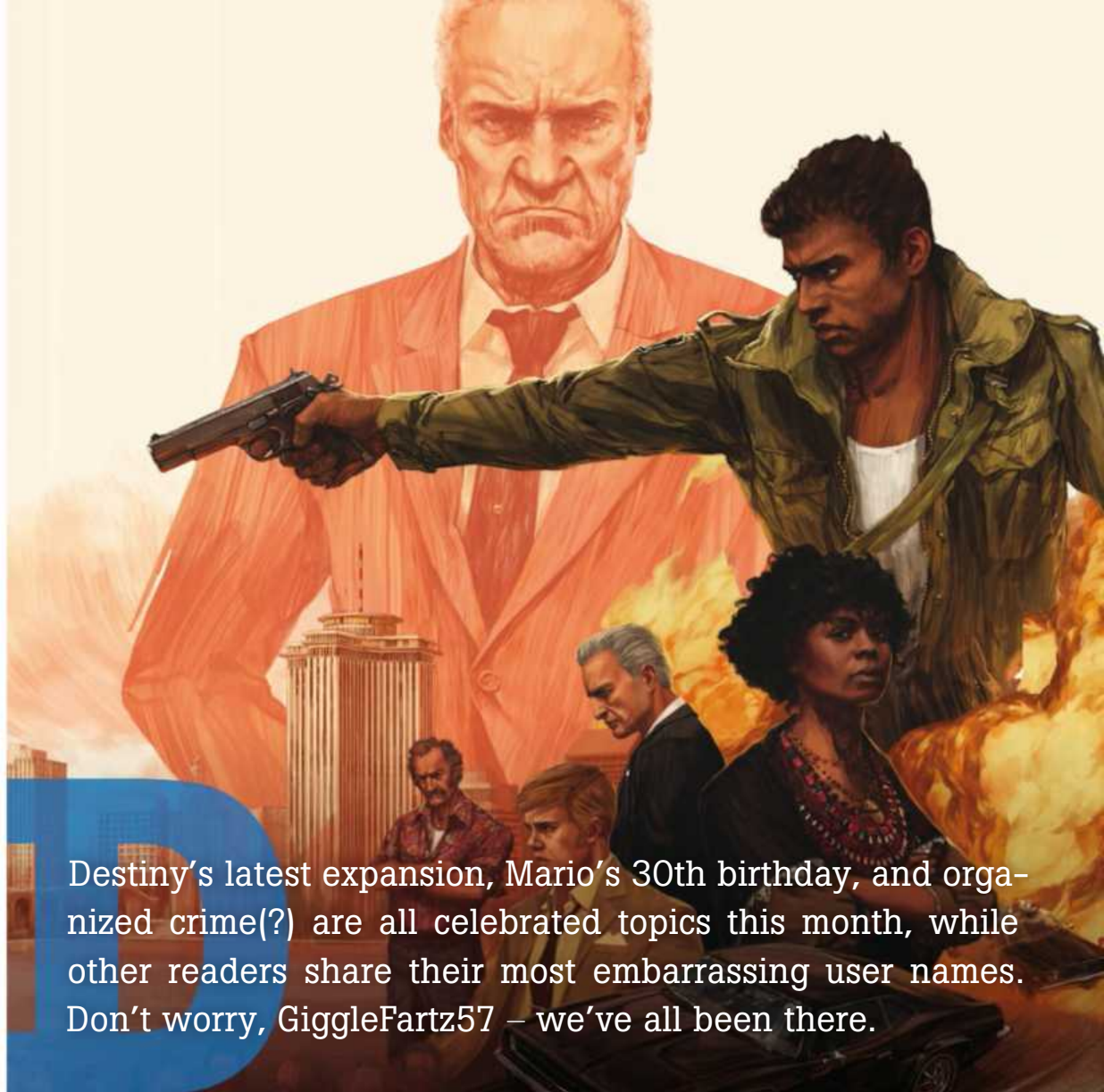
Speaking of DLC, we have an opinion piece about microtransactions and how they're likely here to stay. We also take a look at the new Star Wars: The Old Republic expansion and play with some Steam machines.

» 72 Previews

We've spent many enjoyable hours with Blizzard's new online shooter, Overwatch, and we offer our thoughts. We also take a deep look at the long-in-development The Witness and the new game from the creators of Heavy Rain and Beyond: Two Souls.

» 82 Reviews

We have some of the biggest games of the year in our reviews section including Fallout 4, Rise of the Tomb Raider, Star Wars: Battlefront, and StarCraft II: Legacy of the Void, among many others.



Destiny's latest expansion, Mario's 30th birthday, and organized crime(?) are all celebrated topics this month, while other readers share their most embarrassing user names. Don't worry, GiggleFartz57 – we've all been there.

Married To The Mob

I was ecstatic to see Mafia III on the cover of November's issue – almost as much as when it was announced. Your article answered my main question – if Hangar 13 is expanding on the open world, which only seemed like a secondary feature in Mafia II. I'm also glad to hear that they're blending secondary goals with the main story, which seems like a rarity in open-world games currently. I'm definitely looking forward to hearing more about the game and seeing what Hangar 13 is capable of.

Richard Krebs
via email

Hangar 13 is working hard to do the Mafia series justice, while simultaneously building a compelling open world that is actually worth exploring. Find out more about the developer's approach by viewing our month of bonus coverage at gameinformer.com/mafia3.

Mario Mania

I really want to thank you for your Mario 30th anniversary article (Making Mario, issue 271). I know there aren't that many Nintendo articles in your magazine (there's not much to write about), but it was a great story and one of the more satisfying reads I've had in a while. The way you described the more iconic games in the series was beautifully crafted and brought back memories of playing these games. I haven't read anything more entertaining and pleasing since your Link Between Worlds review. My massive Nintendo fanboyism is satisfied.

Henry Stollenwerk
via email

I just wanted to say thanks for Kim's excellent Xenoblade Chronicles X preview in issue 270 (my most anticipated Wii U game yet!), which was followed up with your amazing Mario 30th anniversary article in issue 271.

I have read and reread both articles with a big, silly Nintendo-fan smile on my face. It seems like you often get accused of underrepresenting Nintendo titles, and after these issues I can safely say that is completely untrue. There are, of course, fewer Nintendo titles coming out (and even fewer that are worthy of cover stories), but when there are, you more than do them justice.

Patrick Harding
via email

The unbridled adoration we received from Nintendo fans this month was appreciated, if a little unsettling – we're so used to accusations of being "bias against Nintendo" that we don't know how to respond to genuine praise. Can we all just assume the recent coverage was part of some dastardly new anti-Nintendo conspiracy we're working on?

Moving On

In issue 271's Feedback, you stated that the reason you put Destiny's The Taken King on your cover was due to its large install base. That doesn't account for all the equally popular games that don't get DLC cover stories, even though they may have equal or more content. I think if you owned up to the fact that The Taken King is your first DLC cover in the history of the magazine, and acknowledge that's why the decision is divisive, then I'm sure many readers could put this issue behind them. I think GI as a whole could benefit from recognizing that a DLC cover is kind of a big milestone for this publication.

Ian Slater
via email

We didn't realize our Taken King cover story was so traumatizing that readers need help putting it behind them. Jokes aside, as our original response stated, our decision wasn't based solely on Destiny's large player base; Bungie also had a wealth of new information to share with us, making it an enticing story to tell. That said, our first DLC cover story is certainly a big milestone, and Bungie's continually evolving shooter felt like the right game for it. Speaking of The Taken King...



Take Two

I wholeheartedly agree with your review of Destiny's The Taken King. So many issues were resolved with that expansion. I'm still working on my main guardian and definitely feel I've gotten my money's worth without it becoming repetitive; every time I think I've finished all of the missions, another one pops up. As much as I love it, I feel that one major problem still exists: There's still no matchmaking for raids. I've been playing Destiny for quite some time and still haven't gotten to participate in a single raid. I don't have a lot of friends that play Destiny, and I can't revolve my life around scheduled raid times. I feel like those of us in this predicament are missing entire portions of the content that we've paid (a lot of) money for. I hope Bungie addresses this in the future. Until then, the expansion gives me plenty to do outside of the raids.

Chris B.
via email

The lack of raid matchmaking is still a problem for Destiny. On one hand, we agree with Bungie that attempting a raid with a crew of random players (who may or may not have mics) is a recipe for disaster. On the other hand, the continued inability to meet and organize with new players inside the game remains a perplexing disappointment – especially for a game Bungie dubs a "shared-world shooter." Hopefully the developer can figure out a solution that doesn't involve cruising third-party forums. If only the game had some kind of central social hub where players could congregate...

Short Answers To Readers' Burning Questions:

"Is there a reason you left out Black Ops III on the November Timeline?"

It's a metaphor.

"What kind of collage experience or degrees game developers have?"

We recommend a PhD in making cat faces out of magazine clippings.

"My mom never plays games even though she's amazing at them. Do you know of any games that could get her to play?"

Quit bugging your mom.

Worst News Tip Of The Month:

online tv play

Question Of The Month:

What's the funniest moment you've ever witnessed in a video game?

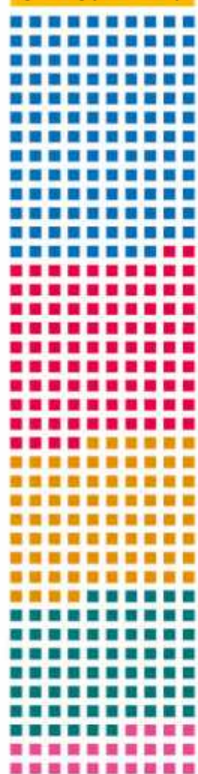
gi spy



(Left) Recently, GI raised \$38,000 during our Extra Life live stream. Thanks to a generous donator, Andy looked a bit goofy **(Right)** Unfortunately, Tim wasn't faring as well after downing a few ghost peppers for charity.

(continued on page 6)

On Your Mind



- Favorite In-Game Rewards
- Praise From Nintendo Fans (Stop It!)
- Mafia III Excitement
- Online Discourse Lamenters
- "Single-Player Is Dead!"



What's In A Name

In issue 271, we asked readers to share the most awesome or embarrassing name they've ever gone by in a game. As we should've guessed, most of the responses were unfit to print. Here some of the less offensive replies:

Back in 2006, my Gamertag was deezenutz. I picked it because it was funny and I am a funny guy. Unfortunately, Microsoft did not feel the same way and banned my account, then forced me to change it. I called them and said I sold nuts for a living, but they didn't believe me.

John M

My PSN name is tallsam. It sounded really cool to me back in middle school, when I was indeed taller than everyone else. However, most of my friends have had substantial growth spurts since then, and I have come to lament the choice. I have too many trophies to delete my PSN account, so I live with the regret whenever I log on. Oh, how I long for bygone days.

Sam Caloras

When I was a little girl, I used to watch my dad play Rainbow Six with all his work buddies after he got home from working third shift. His Gamertag was WarPig. When he was done he would let me play them for a bit. I'll never forget when he and I set up my very first gamertag: LittleWarPiggy. Thanks, dad!

April Hebb

The Prepubescent Plight

I want to bring up what I think is one of the most important issues in online gaming today: the harassment of 12-year-old boys. Everyone is always upset when we beat you in Call of Duty or other first-person shooters, saying things like, "Wow, 12-year-olds are such noobs, they use hacks!" I don't want to hear those ratchet haters. Us 12-year-olds have a lot on our plates, like homework, school, and paying for \$60 video games when our allowance is \$5 a week. So please, haters: If we are better at video games than you, take it out on your imaginary friends – not us!

Asher Herbstman
via email

We're not sure if the treatment of 12-year-olds is the biggest issue in gaming today, but the player community shouldn't tolerate harassment of any kind – even when it includes telling off kids who aren't even old enough to be playing M-rated games, much less using their secret cheat codes to kick our butts. Darn kids.



(Left) This month Insomniac creative director Brian Allgeier dropped by to show us Edge of Nowhere, which you can learn all about on page 46

(Right) Readers Katey and Eric Harmer sent in this picture of their son's first Halloween. His name? Link, naturally





WINNER

1 Kara Zisa

We've never seen a picture that's simultaneously so touching and creepy

2 Will Lewis

Here's a glimpse at the first launch game for the Nintendo NX. Really, you can trust us

3 Michelle Lucas

We bet it's really easy for a robot to sit still while posing for a portrait

4 Emalee Cacciola

Not even a classy oil painting can make Dorian's mustache any less dorky



2



3



4

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Send to: Game Informer Reader Art Contest | 724 First Street North, 3rd Floor | Minneapolis, MN 55401 or Email to: ReaderArt@gameinformer.com



(Left) NCSoft's Omeed Dariani, Nicolas Coutant, Julianne Hartly, and Ben Conrad couldn't resist the allure of GI's vault during their recent visit
(Right) Dan Tack caught up with pro Magic: The Gathering and Hearthstone player Brian Kibler at this year's BlizzCon

Inviting Steam Into The Living Room

The hits and misses of Valve's new technology

Three years ago, Valve launched its first mission to slyly occupy the living rooms of PC gamers with Steam's Big Picture Mode.

The new feature made it easy to navigate your library of digital games on an HDTV using a traditional controller, and many correctly predicted it was Valve's first step toward dedicated Steam hardware. Now Valve has released a suite of kits to help you play games from your couch. We've spent hours getting acquainted with Valve's innovative controller, a tiny box that streams Steam anywhere, and one of Alienware's dedicated Steam Machines. Read our appraisals to find out if any of the new hardware is the right fit for you.

by Tim Turi

NOTABLES

- 10 impulse
- 12 massive: knights of the fallen empire
- 13 massive: guild wars 2: heart of thorns
- 14 top ten: virtual-reality worlds
- 16 interview: chris avellone



Rating

D

Alienware Steam Machine

Over a dozen Steam Machines sporting Valve's proprietary SteamOS will be available to PC users in the long run, and we got our hands on a middle-grade unit from Alienware.

The sleek little black rectangle is more aesthetically attractive than most of the clunky gaming PCs trying to look cool, but that's where the compliments end. This machine is virtually non-upgradeable thanks to its compact form factor. Good luck trying to squeeze in a new video card down the road. Despite the solid guts, like a 1TB hard drive and 2GB GeForce GTX GPU, this machine's operating system is what ultimately holds it back.

SteamOS is a Linux-based OS, which means you won't be able to play the majority of this year's biggest triple-A releases, including *Fallout 4*, *Call of Duty: Black Ops III*, and *The Witcher 3: Wild Hunt*. You can also rule out games that require EA Origin. Steam Machine users are left to the whims of developers willing to retroactively support Linux, which doesn't instill confidence. Techland's *Dying Light* was one of the only major releases of 2015 I could find that runs on SteamOS (if you don't count the janky PC version of *Batman: Arkham Knight*).

Savvy users can install Windows on the machine, but Alienware warns on its website that "...customers would be at their own risk to install it over what comes factory shipped." Outside these critical shortcomings, it comes packaged with a Steam Controller and it's a decent platform for popular Steam titles like *Undertale* or *Ark: Survival Evolved*.

Given the Alienware Steam Machine's limiting OS and lack of customizability, we recommend spending your dollars building your own tower.

\$549, dell.com



Rating

B+

Steam Link

Playing PC games on an HDTV in a room far from your computer desk can be a hassle, whether you're running lengthy HDMI cords down hallways or lugging around a beefy rig. Thankfully, the Steam Link does the heavy lifting for you with solid results depending on the quality of your PC and home network.

The Steam Link quickly and easily syncs up with wired and wireless computers on your network. Once it's paired, you can use an Xbox or Steam Controller to navigate your Steam library using Big Picture Mode. The performance of the games you play using Steam Link varies depending on how powerful your PC is, but be prepared to drop some frames and deal with some compression issues if your internet network is anything less than fully optimized. Thankfully the Steam Link allows you to shift streaming priorities with fast, balanced, and beautiful settings. We experienced annoying and sometimes deadly lag when playing demanding titles like *Dark Souls II: Scholar of the First Sin* and *Super Meat Boy* via Wi-Fi, but that problem is reduced dramatically by plugging an Ethernet cable straight into the Steam Link.

This little black box is the best value of Valve's new offerings, and the company promises to continue improving the experience by adding wireless-headset support and more. If you want to play Steam games on a TV away from your PC with as little hassle possible, this is your best bet.

\$50, steampowered.com



Rating

C+

Steam Controller

Valve's premier effort to make a controller is inspiring innovative, but isn't the all-in-one gamepad the company suggests.

At first blush, the all-plastic controller feels cheap, from the chintzy backgrip triggers to its slight weight. The throw on the shoulder buttons and triggers feels mushy compared to the other current-gen console offerings. The dual haptic trackpad circles are the stars of the show, and tinkering with them is a unique experience. Keyboard-and-mouse games like *Civilization V* and *FTL* play well with it, thanks to both developers' and Steam users' customizable button configurations. The single left analog stick feels on par with the *Wii U GamePad*'s and gets the job done for its common purpose of controlling character movement. However, aiming your shots with the right trackpad in modern shooters like *Call of Duty: Black Ops III* or *Dying Light* feels awful. Even after fiddling with the look sensitivity you can find yourself over-aiming or looking in the wrong direction entirely.

The Steam Controller is a capable means to comfortably play strategy and adventure games on the couch, but we can't recommend it over an Xbox controller for anything that requires twitch reflexes or precision aiming.

\$50, steampowered.com ♦

Wonderstruck Aims For Boundless Adventure



Minecraft has had a seismic impact on the game industry. Freeform exploration, voxel-based game worlds, and communal creation have all exploded in the wake of its success. The developers at Wonderstruck acknowledge that seminal title is a clear inspiration for their game, but they're shooting for several dramatic twists in their upcoming release, **Boundless**, including drawing from several other surprising sources.

by Matt Miller

"We're massive fans of Minecraft and its community, but there's a much larger catalogue of games we look up to," says director James Austin. "Eve Online is a great example for how a strong economy can create really powerful social dynamics; we talk about it a lot. The Just Cause series has fantastic examples of fun sandbox toys, giving them to players and seeing what happens." By mixing open-world sandbox discovery, deep creation tools, and social interaction, *Boundless* feels like its own beast.

The game drops you into a random world when you begin, which might

be highly populated or a vast wilderness. Landscapes and creatures vary between worlds, and you choose how to interact with them. "We're creating a universe where very different kinds of players (who might not normally be playing the same game) can collaborate and be valuable to each other," Austin says. "Creative players can build shops and trade treasures and create amazing sandbox contraptions. Competitive players can hunt for titans, claim land, conquer worlds, and open a portal to expand their reach across the universe."

The portal system is intriguing, since it allows a vast and interconnected social ecosystem, regardless of your location in the real world. "Portals are our way of seamlessly connecting every world, player, and place," Austin says. "If your friend has set up home on another world, but you still want to be able to play together, then you can physically connect those two worlds with a portal. It's just like building a doorway to another location."

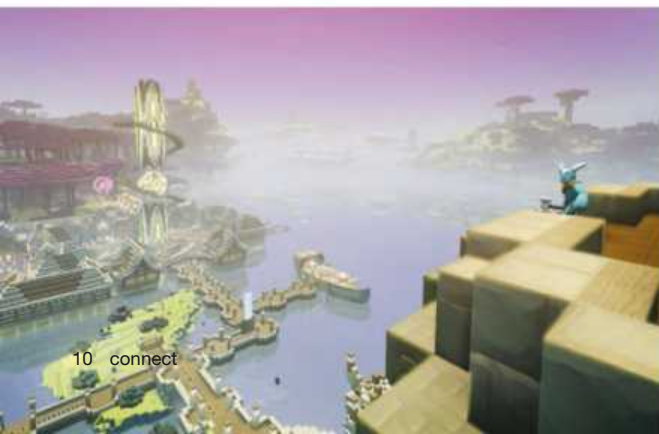
Resource gathering is accomplished by two separate activities. Mining encourages players to dig down and

out to find rich veins, while exploration has them uncovering materials deep in caves or high on mountaintops. *Wonderstruck* is promising various tools to aid in discovery, including a grapple line that allows players to cross chasms, climb into trees, or reach distant areas.

The grapple also comes in handy if you're into the combat aspects of the *Boundless* universe. *Wonderstruck* is promising all sorts of creatures to confront, but every world also has a titan – a massive sentient fortress that is home to various enemies and traps. They're so big you need to use your grapple to get on top of them, and it takes many players to bring one down. "Technology harvested from titans allows players to create their own floating sandbox structures," Austin explains.

I explored some of *Boundless* for myself, but the game is so dependent on social engagement, I had a hard time imagining the bustling interlocking hubs that might one day exist within. However, the procedurally generated world offered plenty to discover on my own, including strange creatures, opportunities for mining and tool creation, and more. I'm also fascinated by the portals; upon finding one, you can look into another world in real time, and the landscapes and visual tone of that place might be completely different from your current location.

Wonderstruck is aiming for cross-platform play on PS4 and PC, a feature that remains relatively rare. While the game is available now on Steam Early Access, the developer is mum on a final release date. ♦



The Good

NI NO KUNI II

has just been announced (subtitled Revenant Kingdom), a sequel to the RPG by Yo-kai Watch/Professor Layton developer Level-5 and Studio Ghibli. Publisher Namco Bandai says the first Western release, 2013's Ni No Kuni: Wrath of the White Witch, shipped over a million copies worldwide.



g.b.u.
THE GOOD, THE BAD, & THE UGLY

The Bad



KONAMI

has closed its Los Angeles production studio as part of restructuring. Formerly a branch of Kojima Productions, the studio contributed to the development of Metal Gear Solid V: The Phantom Pain. With the game out the door and (more importantly) creator Hideo Kojima's departure from Konami, the L.A. location's contribution to the publisher is also over as Konami focuses more on mobile development.

Quotable

"This game is a huge part of our lives and we don't want to compromise on its quality."

The Ugly



PAYDAY 2 is under fire by gamers for its game-breaking microtransactions, which developer Overkill originally said it would never add. Steam moderators for the game refused to work due to the death threats they were getting from gamers and over the moderators' disagreement with Overkill's "immoral business practices" regarding microtransactions. The developer has met with the moderators and says it will meet with members of the community, but as of the time of this writing the microtransactions remain. ♦



— **David Anfossi**, head of Eidos Montreal, regarding the fact that Deus Ex: Mankind Divided is delayed until August 23



Knights Of The Fallen Empire

Is this the Star Wars RPG you've been waiting for?

by Matt Miller

Given the years that have passed since *Star Wars: The Old Republic* launched, the arrival of a solo-focused, mostly standalone campaign expansion for the game seems like an odd choice. But it's an intriguing way to keep the community engaged. *Knights of the Fallen Empire* is essentially structured to be a new *Knights of the Old Republic* game, albeit couched within a four-year-old MMO.

The only way to play *Knights of the Fallen Empire* is to subscribe to *The Old Republic*, which opens up the full scope of previous expansions and additions. That said, this can be played in its entirety without ever interacting with the broader game.

If you're new to the game or a returning player who never leveled a hero or villain all the way to level 60, this new expansion includes a dedicated character slot that jumps you right to the previous level cap. It even sets up an appropriate skill loadout and hotbar layout, unless you want to customize everything yourself. Each of the eight previous classes slip comfortably into the new storyline. Some story elements change, like which characters recognize you and how they perceive you. However, the new narrative flexes to accommodate any character, and puts a bigger focus on your personal decisions than your class.

Storytelling is the highlight of *Knights of the Fallen Empire*. Several new and returning characters drive the action, which sees a new imperial power threatening both the Sith and the Republic, forcing a tentative

alliance. As the great hero of the previous war, your character is uniquely positioned to stand in opposition to the threat, so the bad guys try to take you off the board, freezing you in carbonite. When you're awoken a few years later, things look grim, and you form a ragtag resistance to win back the galaxy.

BioWare delivers a pulpy story in the grand *Star Wars* style, and several surprising reveals and tense character interactions give the tale some weight. However, that narrative is far more linear than it pretends to be, and while your choices might alter individual interactions, they rarely turn the ship of the plot in any meaningful way.

MMO gameplay and visuals have come a long way in recent years, and *The Old Republic* is showing its age. The hotbar combat feels stale and inactive, though the animations remain top notch, lending an illusion of action. The tedium is accentuated by questionable balance choices; even with a newly crafted level 60 character, the battles are easy. With any A.I. companion at my side, I rarely dropped below 90-percent health,

and strategic power use versus random button pressing had roughly similar results.

Knights of the Fallen Empire is an episodic experience. As of this writing, the opening nine chapters offer an introduction to the story that plays out over about 10 hours. The meat of the storytelling in those early hours is fast-paced, but it's really a build-up toward a more grind-focused experience that waits at the end, clearly meant to sate players as they wait for more content.

Even with its slower pace, I enjoy the investment and building opportunities in this second section of the expansion, which focuses on recruitment of allies and sabotage of alien facilities. Many familiar allies show up, and you get that appealing fantasy of leading a growing alliance, inspired by other BioWare titles like *Dragon Age: Inquisition* and *Mass Effect 3*. The new *Star Fortress* flashpoint dungeons offer a loop to chase better gear, but any one of the six stations is virtually identical to the last, which is disappointing.

Given the abbreviated nature of the story, and its incomplete arc, *Knights of the Fallen Empire* is ultimately a "wait until later" recommendation. That's not because I don't like it. The cinematics, epic *Star Wars* score, and character interactions are a lot of fun, even if the gameplay feels dated. However, given the scant hours it takes to churn through the first nine chapters, most players should wait until BioWare finishes its storyline, and then pay for a single month or two to play the entire epic. 💎

Guild Wars 2: Heart Of Thorns

A cache of content for the core MMORPG



massive

Guild Wars II: Heart of Thorns comes with a massive basket of content offerings, and if you've been waiting to try out the action-oriented fantasy title, this first expansion may be the key component to draw you in.

ArenaNet has taken a unique approach here, keeping the level cap at 80 but embracing alternate advancement paths that allow players to continue developing at the account level long after level cap. While this factor should be enticing for long-term players, new players have a lot of cool stuff to jump in and play with too, all while preparing for end-game content in raids (which are new with this expansion). All of these aspects take place in the shadow of guild halls created and run by players. Finally, you have a place to hang out with your guildmates, work on cool projects, prepare for adventures, and spar with friends or rivals.

You might think that the handful of new zones doesn't warrant expansion status, but the zones are quite large. More importantly, they have a huge degree of verticality that takes advantage of one of the key masteries that fresh jungle explorers will pick up: gliding. Players can zip around zones on gliders and unlock special

abilities to further enhance the traversal aspects of these handy contraptions, so traveling in these new areas is not a simple walkabout. Gliders are a fun way to approach new zone content, and discovery awaits both above and below in these tiered adventure zones.

Of significant interest outside of alternate advancement is the addition of a new class and new specializations for all the old classes. I had a blast playing as a Revenant, wearing heavy armor and using legendary stances to call upon the heroes of old. Channeling the powers of ancient legends like assassins and demons allows players to mix and match playstyles in an epic way, and the Revenant quickly solidified a place as my favorite class. Other classes are not left out, as each receives a new specialization. Necromancers using greatswords to employ new skills is hard to pass up.

Heart of Thorns also finally brings raids to Guild Wars II. These 10-player instances don't come with any difficulty slider, so you're going to want

by Daniel Tack

to bring your best team to the table. Working raid mechanics into a game without traditional tanks and healers is a curious affair; things play out as a fairly standard take on the MMORPG raid. Players need to be coordinated as they move in, move out, switch DPS targets, take down additional spawns, and even glide to safety during dangerous area-of-effect attacks. If you've experienced raiding in other MMORPGs, you know the drill, but it's great to see these kinds of encounters come to Guild Wars II. The raid system isn't mandatory to stay on top of gear progression, but offers some cool cosmetics and other neat bonuses for those who choose to engage with the top-tier encounters.

Guild Wars II: Heart of Thorns adds a wealth of new content, but it likely won't swing you one way or another on making it as your title of choice in the MMORPG arena. If you've been thinking of trying it, the core game is completely free, so now is a solid time to hop in and splash around to determine if you're interested in exploring the rest of the features available in Heart of Thorns. ♦

Virtual-Reality Worlds

by Kyle Hilliard



The Animus

Assassin's Creed

The virtual worlds of Assassin's Creed inside the Animus are so well realized that it is easy to forget everything is a simulated recreation of the past. Abstergo may be a villainous company, but it makes damn-good VR tech.



The Deckers' Usenet

Saint's Row: The Third

Using the NEMO Chair in Saint's Row: The Third, players can enter the Deckers' Usenet. It's a weird place where you start as a playable toilet, use a gun-arm like Mega Man, and even spend some time in a text adventure.



Tranquility Lane

Fallout 3

Fallout is known to have surprise locations and anachronistic technology throughout its war-scarred world, but Tranquility Lane offers a left-field virtual take on the past with its totally average neighborhood.



The Pyramid

Enslaved

Though you never visit the virtual world crafted to satiate a blissfully ignorant mankind inside The Pyramid, protagonists Monkey and Trip see its effects from the outside. It has dark implications on Enslaved's future world.



The World

.hack

The World is the VR MMO players play while playing .hack, which isn't confusing at all and we don't understand why you have so many questions. The series inspired multiple entries and an anime based on its game within a game.



The Internet

Mega Man Battle Network

The Internet of Mega Man Battle Network is different from the real-world place where you get your tweets. It's so dangerous that humans send in surrogate NetNavis in order to fight viruses and retrieve information.



The Matrix

The Matrix

No Matrix game has lived up to the spectacle of the films, but the virtual world crafted by the robots is still full of intrigue. Learning kung-fu in 20 seconds and super jumping just seems like a good time.



Assorted Virtual Worlds

Virtual Bart

Virtual Bart is home to many worlds that explore everything from the dinosaur-filled past to a futuristic Mad Max parody, but oddly many emulate specific moments from Bart's life, like school picture day and visiting the waterpark.



The Digital World

Digimon

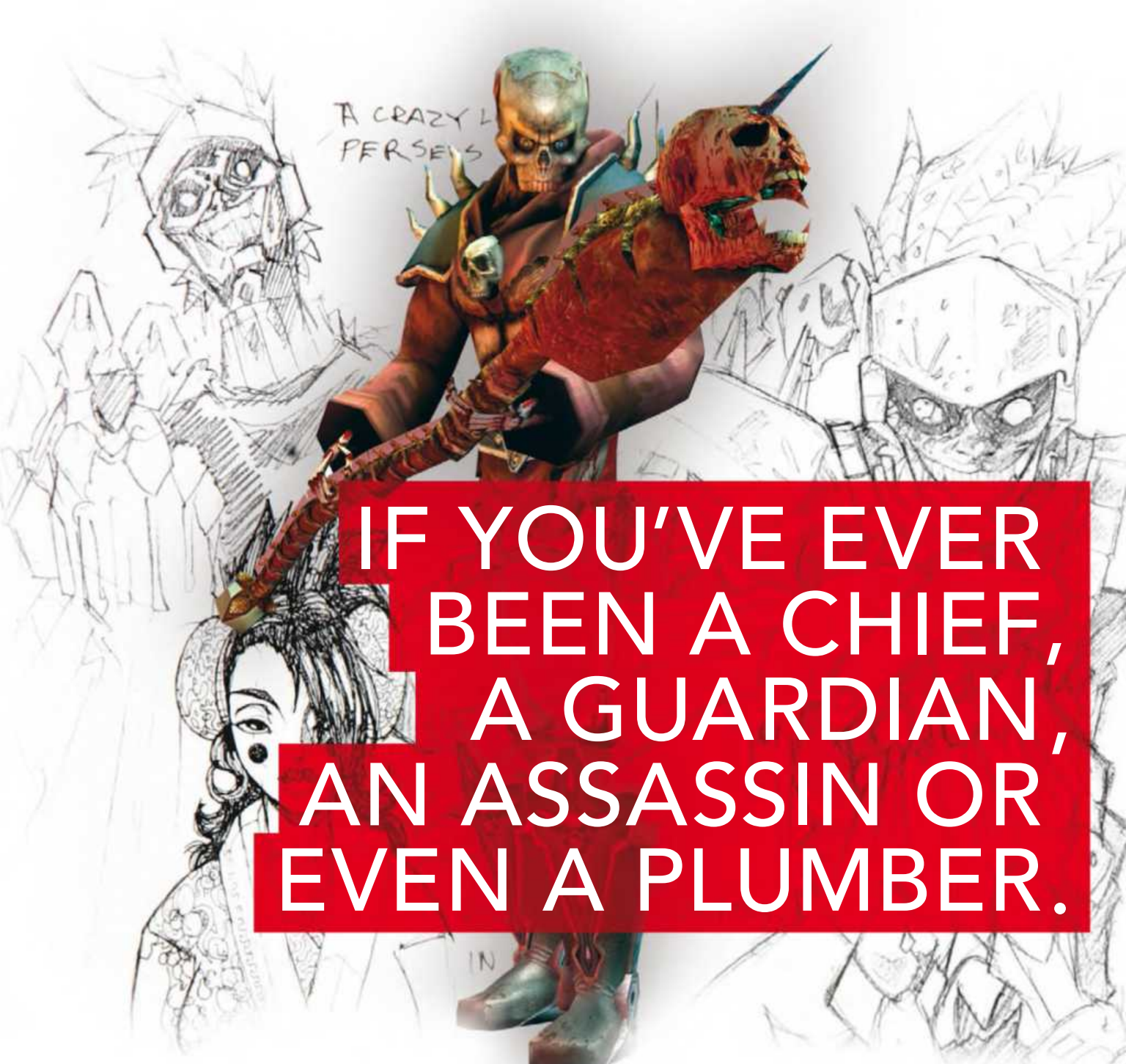
In the world of Digimon, the Digital World is a parallel reality that quickly grew and expanded as soon as its roots were created in the early 20th century. It's similar to the normal Earth we know, but is full of Digimon.



Added Reality Interface

Heavy Rain

The ARI device seen in Heavy Rain is low on the list because it's part augmented reality, part virtual reality. It's what Google Glass may have been had it become popular. It's also apparently quite addictive. 💎



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See aipprograms.info for program duration, tuition, fees and other costs, median debt, salary data, alumni success, and other important info.



photo: Ed Carreón

Gaming Narrative's Number One

Chris Avellone is known across the industry for his visionary work on PC role-playing games while at companies like Interplay and Obsidian. His résumé includes impressive titles like Icewind Dale, Star Wars: Knights of the Old Republic II, Neverwinter Nights 2, Fallout II, and Pillars of Eternity. Avellone has recently gone rogue, leaving Obsidian to take on new adventures with Divinity: Original Sin II.

What drew you into the industry? How did you get your start?

I kind of fell into the industry. I wanted to play RPGs. I thought they were fascinating – it was make-believe with rules, which felt “fair” to me. My friends enjoyed gaming as well, but they never wanted to be the GM. So, to have the vicarious thrill of being a player, I became a GM, and discovered that being an entertainer was (largely) fulfilling... And I wanted to keep doing it. First, writing modules (or repurposing and polishing ones I had done), until I realized what a horrible career move that was, since it's not possible to make a full-time living at it, especially if you're new to the scene. Still, with the help of Steve Peterson (who's now a senior editor at the Gamer Network) I moved to Interplay, and ended up being a virtual GM from then on. No regrets! (And thanks, Steve!)

You co-founded Obsidian Entertainment, so your departure came as a surprise to many. How did that come about?

I was indeed one of the founders. I'm still surprised I got the opportunity, and I'm grateful to Obsidian for it... Obsidian had cool people, but there were a lot of projects that Obsidian wouldn't consider or couldn't consider (both internally and externally). There were even ones that Obsidian didn't know it couldn't do, some of which I discovered to my surprise after my departure (hypothetically, something with “Old” and “Republic” in the title). Hey, now I know, but I never would have known otherwise.

My role was often a question mark, one that I attempted to get answered a few times. I've said this before in other interviews, but while creative directors can give a lot of advice and thoughts, they may not have any decision-making power at a company; they can't enforce a design philosophy or even tell any other employee what to do, even project directors and lead designers... So while in the [creative director] role, I found it was easier to take on specific roles on studio projects instead to achieve definition (creative lead, project director, lead designer) or fill in when another employee departs (which was more common). As an example: I was asked to fill in as lead designer on Alpha Protocol when the previous lead departed... There was no one else to fill the role, and as Alpha Protocol proved, the role and its place in the hierarchy couldn't be left vacant.

Most creative director vision came from codifying the philosophy of all the owners, including management practices for achieving that vision and trying

to ensure it was being followed and championed... It is a collaborative effort, and it often requires asking a lot of questions so that the design philosophy can be agreed upon, since anything else is confusing for the employees, and there's nothing worse than two owners telling an employee different things. It can snap a brain in half. And that is a very expensive medical bill.

So, I don't know if enforcing that common design vision equates to freedom, but it's worth saying that most collaborative efforts require that degree of compromise, especially in games, and it's a group effort from top to bottom. The most freedom I've ever gotten in all the companies over the years is when no one above really cared much about the game I was working on until it was far along... or when you strike out on your own and start kicking around ideas that only need approval from yourself. I've had conversations with a number of devs who I worked with on Planescape, and they agree – with the caveat that you should listen to the players when exposed to the system you're presenting, which is why I love Early Access and beta testing so much.

In the end, life's short, and there's a lot of cool ideas out there that are begging to be explored... Or equally satisfying, you can help other people explore those ideas because you've been on the other side of production so long you know the rungs of the ladder they need to climb, they just need to be pointed to where the ladder is and given a leg up, or even help them with introductions and support when you think their idea deserves to be heard. And that's fulfilling. I guess that's mostly what it comes down to: You can move forward, create, and help others create. I never got into this industry to get rich; I got into it so I could live my hobby, and I'm content with that.

What's it like being a hired gun after working at Obsidian and other major companies for so long?

It's liberating. I've learned more in three months across a variety of genres, alternate development pipelines, and management practices, task tracking, and some eye-opening procedures to speed up production I never would have exposed to otherwise. And also, it's given me a perspective on my own past work. For example, Beamdog's Siege of Dragonspear reminded me what the touchstones of fun companions should be (and what it takes to create a great adversary, not just a villain). Divinity: Original Sin II I wasn't even sure was a possibility, but then the Internet community (RPG Codex) pushed Larian Studios founder Swen Vincke and I to get in touch, so we met for dinner at PAX Prime, traded design philosophy, and it was a great fit, so it all worked out. It's the first time I've

ever had the Internet push for me to get a game-writing gig and then make it happen, so kudos to them. And now I get to divinely sin. Originally. Twice.

In many ways, you've been involved in core PC RPGs since their inception. What are some of the differences crafting one of these experiences today compared to those of yesteryear?

The amount of writing hasn't changed, the interface largely hasn't changed (unfortunately), but the amount of surrounding work that goes into dialogues (voice acting and cinematics) has forced more precision in the writing, if only because you know that edits will be incredibly difficult to make after the recording and be re-translated into other languages. Furthermore, the more voiced a game is, the more you need to approach dialogue nodes like a screenplay instead of a prose description. Planescape: Torment was big on describing the animations an NPC would be doing since we didn't have the budget or interface to show it, but now those animations would be key in larger triple-A games.

Also, overall, the writing process itself has become more polished, including technically. I've had to write numerous style guides for RPGs over the years. And this guide is extensive; it boils down formatting of journal entries, pronunciation guides, how to spell specific inventory items and laying out stats, when to use first person, second person, and third person in text, how to include voice actor direction hidden in the lines, and more. It's a lot more work than just the prose on the screen, but laying out the specs is worth it – and needed, especially for large writing teams.

What do you think of the new virtual reality push? Is this going to be yet another fad, or is it here to stay this time?

Production folks I've spoken to say it's a fad, I don't know if I agree. While movement in VR and “camera out of player control making players dizzy and vomiting out their lunch” are still design challenges, I still think immersion is where the industry is headed, and the feeling of presence that occurs when someone is next to you in virtual space – it makes dialogue and interactions feel so much different.

Looking beyond your current collaboration with Larian Studios, where do you see yourself in five years?

RPGs and stories will always be in my blood. As the years march on, I'm sure I'll still be writing characters that rage across the multiverses – but they always do so in an attempt to help the hero stand out as even more of a hero than they would if the world was silent. ✨

CAREER HIGHLIGHTS

1995

Avellone joins Interplay's Dragonplay (D&D and RPG) division. He makes his first pitch for Planescape: Torment during the job interview

1998

Interplay follows up its successful Fallout game with a sequel, Fallout 2, which Avellone helps design

1999

Planescape: Torment puts Avellone on the map, winning accolades for narrative design and new approaches to role-playing

2004

Avellone leads the design on several other titles, including the canceled Fallout Van Buren, after which he resigns from Interplay

2004

After co-founding Obsidian Entertainment, Avellone begins a long career at the company. He works on Star Wars: Knights of the Old Republic II, Neverwinter Nights 2, Alpha Protocol, and Fallout: New Vegas

2012

As narrative designer on Project Eternity (which would eventually become Pillars of Eternity), Avellone helps shape a modern-day take on the classic PC RPG

2015

Avellone departs Obsidian Entertainment and joins Larian Studios for the upcoming Divinity: Original Sin II



Tolerating The Microtransaction Trap

by Jeff Marchiafava, Senior Associate Editor

Like many gamers, I feel a borderline compulsion to seek out and try new games. The microtransaction-obsessed state of mobile gaming has led me to a ritualistic approach to the space; every few months I head to the app store, download a few promising games, and play them until my enjoyment is crushed by their heavy-handed monetization schemes like brightly colored confectionaries. Invariably, the exercise ends with swearing off (and sometimes at) mobile gaming while questioning how developers can be blind to the adverse effects microtransactions have on their games. Lately, I find myself asking the same question about console games as well.

Microtransactions are still a relatively new concept, so I'm willing to chalk up some publisher missteps to growing pains. However, a few games seem to have come down with a case of the Benjamin Buttons. Guitar Hero already had a well-established financial model built on microtransactions; players happily bought songs from the series' ever-growing DLC library to extend their rock-star fantasies. Guitar Hero Live scraps all that for a free-to-play-style currency, Hero Cash. The bulk of the song catalog can now only be streamed in a preselected and unchangeable order. Playing the song you actually want costs money, and you can't really buy it – all purchases are good for one play only. It's kind of like hanging out by a virtual jukebox all night, except you have to pay \$60 before even breaking out your roll of quarters.

Metal Gear Solid V has been a hit with gamers, but it also betrays Konami's recent shift toward mobile gaming. MGS V players can buy MB Coins to speed up the pointlessly time-gated development of their mother base, as well as buy extra Forward Operating Bases. However, that's not the end of the microtransaction gauntlet, as players can invade your FOBs and steal their resources and personnel. The solution? Spending even more MB Coins on virtual insurance to grant temporary protection from online thieves. Because if there's one thing everyone loves, it's paying for insurance.

Even Microsoft's flagship franchise isn't immune. Halo 5: Guardian's much-hyped Warzone mode is needlessly tainted by microtransactions. Players can buy Requisition Packs, which contain myriad power weapons, boosts, and vehicles. These packs present a hat-trick of lousy practices: They introduce a severe pay-to-win advantage, contain single-use items that need to be continually repurchased, and are sold in blind packs, preventing you from buying the items you want and avoiding those you don't.

In fairness to their respective developers, all three games offer players alternative ways to earn their currencies besides spending real-life money. In fairness to their respective players, all three games would also be a lot more fun and fair if those systems didn't exist at all, allowing you to just focus on enjoying the game instead of weighing additional purchases at every turn of the screw.

You don't need to look very hard to find a gamer on a crusade against microtransactions. I harbor no such grudge. DLC has shown me the virtues of paying a little extra to extend my favorite games in meaningful ways. Even cosmetic

items don't bother me; if crazy people want to spend five bucks to do the Carlton in Destiny (I'm looking at you, Andy McNamara), I'll happily freeload off the supplemental funding they provide Bungie. Games like League of Legends, Team Fortress 2, and Hearthstone thrive on microtransactions that respect their players and gameplay. I have no inherent qualm with microtransactions, but when their overzealous implementation undermines a game I've already bought and am enjoying, I feel more inclined to reach for a torch and pitchfork than my wallet.

That said, an angry-mob mentality isn't the answer. Microtransactions are here to stay; boycotting a game like MGS V over its ridiculous base insurance will only deprive you of an otherwise exceptional experience, and review-bombing a game with inflammatory comments undermines the one real tool players have at their disposal: feedback.

Reasoned criticism (i.e. comments that don't end with "kill yourself") can inform how developers employ and present microtransactions. After Assassin's Creed Unity was roundly criticized for its omnipresent Helix points, Ubisoft scaled it back for Syndicate. Microtransactions are still there, but tucked away in a single menu that's easy to ignore. That may sound like a small victory, but reduced visibility makes it easier to vote with our wallets against microtransactions without being forced to feel like consumers while playing the game. ♦

The views and opinions expressed in this column are strictly those of the author and not necessarily those of Game Informer



05.2



13

19 Darkest Dungeon



21 Hyrule Warriors: Legends



26 The Witness



26 Lego Marvel's Avengers

January

01 Sherlock: The Abominable Bride

Tonight BBC airs a new 90-minute episode of the Benedict Cumberbatch-led *Sherlock*, which finds Holmes and Watson in 1890s London. Yes, you read that correctly. The episode will also air in select theaters on January 5 and 6.

05.1 Marvel's All-New Universe

The rollout of new Marvel series continues in the new year with number ones for *Old Man Logan*, *Captain Marvel*, *Rocket Raccoon & Groot*, *Spider-Man/Deadpool*, *Silver Surfer*, and *Agents of S.H.I.E.L.D.*

05.2 Lara Croft And The Frozen Omen

If *Rise of the Tomb Raider* left you wanting more Lara Croft, you can catch up with her in Dark Horse's ongoing

Lara Croft and the Frozen Omen comic-book series. Today's story introduces a new enemy named Mr. Green.

06 The Game Informer Show

Tune in every Thursday to the Game Informer Show, a two-hour exploration of the latest games and news. Hosts Ben Hanson and Tim Turi also interview industry talent to learn the stories behind the year's biggest games.

07 Smite World Championships

Held in Atlanta, the Smite World Championships consists of two tournaments unfolding over four days. The best teams on PC are competing in a tournament for \$1 million in prize money, and Xbox players are gunning for \$150,000. Head online to watch the battles streamed live.

10 The Golden Globe Awards

Ricky Gervais hosts the 73rd annual *Golden Globe Awards* show tonight. Along with jokes likely at the expense of Tim Allen, expect to see plenty of surprising award winners. Our money is on *The Last Man on Earth* sweeping everything...even the film awards.

13 The Legend Of Wonder Woman

DC's biggest release of the month is a new nine-issue *Wonder Woman* origin story penned and illustrated by *The New York Times* bestseller Renae De Liz. The first issue releases today and focuses on Diana of Themyscira's Amazonian childhood.

19 New Releases

› Darkest Dungeon (PC)

21 New Releases

› Hyrule Warriors: Legends (3DS)
› Yakuza Kiwami (PS4, PS3)

24 The X-Files Returns

At the conclusion of the NFC

Championship Game (that's football), Fox is airing the first episode of the six-part *X-Files* return. David Duchovny and Gillian Anderson are back as Mulder and Scully, and Chris Carter directs. The second episode airs on January 25.

26 New Releases

› Final Fantasy Explorers (3DS)
› Lego Marvel's Avengers (PS4, Xbox One, Wii U, PS3, 360, 3DS, Vita, PC)
› The Witness (PS4, PC)

29.1 New Releases

› Sébastien Loeb Rally Evo (PS4, Xbox One, PC)
› This War of Mine (PS4, Xbox One)

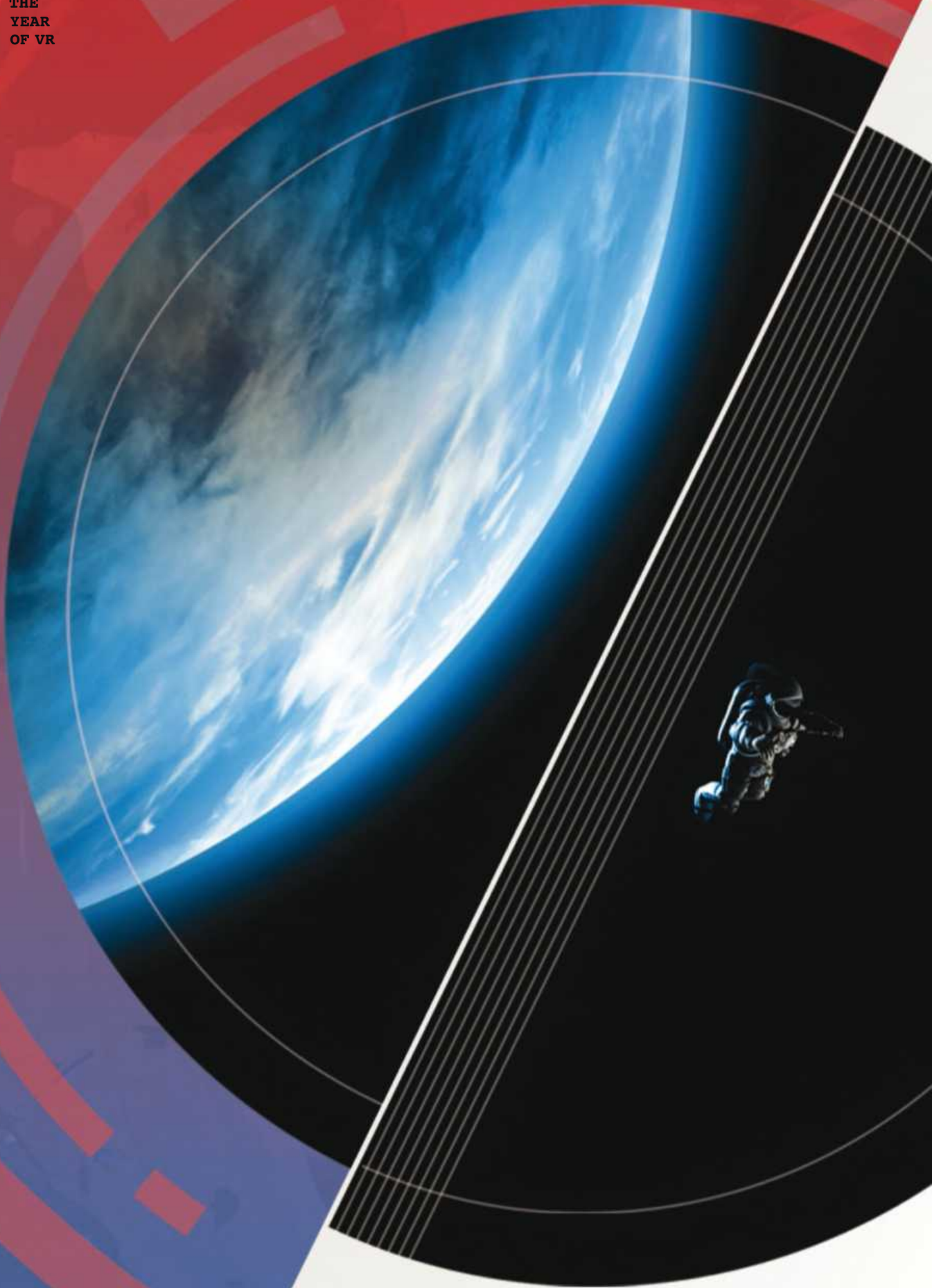
29.2 PAX South 2016

While not offering as many new game announcements or hands-on opportunities with upcoming games as other PAX conventions, PAX South (held in San Antonio over the weekend) is loaded with panels and opportunities to play card games, board games, and multi-player games with other PAX attendees. PAX South is also a great convention for cosplayers. ♦

2016



THE
YEAR
OF VR



THE YEAR OF VR /

Virtual reality is coming to gaming in 2016, and it has the potential to change the way we play forever. We dive deep into the platforms, the games, the promise, and the challenges facing this nascent technology

Since the first television sets were sold to eager consumers in 1928, our culture's relationship with media and entertainment has been growing ever more intimate. Along the way, screens got larger, options for programming grew wider, and our selections become more personal and instantaneous.

Every so often our drive for information and entertainment takes a leap instead of a step. Virtual reality could represent an enormous change in how people around the world will play games, embrace education, watch movies, and eventually, communicate with one another.

In August 2012, the long-buried hope for home-use virtual reality found new life. Opposed to the heavy, clunky headsets of the 1990s, the Oculus Rift Kickstarter represented another chance at the "metaverse" we'd been promised in science fiction for decades. It came with the endorsement of developer savant John Carmack, Valve founder Gabe Newell, and Unity engine founder Dave Heggason.

The who's who of the gaming world believes Palmer Luckey's garage-built Oculus Rift headset has a legitimate chance of sustainable mass market appeal. Facebook agreed, acquiring the company for \$2 billion in 2014. While the buyout took the VR enthusiast world off guard and was met with substantial trepidation in the gaming community, Oculus has retained its DNA (even if it did move from its original Los Angeles headquarters to San Francisco). The deal also convinced the mainstream media that VR is a technology to watch.

At the same time as Oculus' ascent into the spotlight, Sony and Valve were investing into virtual reality research and development. Both projects eventually morphed into consumer products: the PlayStation VR, which is the only console-centric offering, and the HTC Vive, a headset powered by Valve's technology.

These three companies stand poised at the vanguard of the virtual reality movement, and 2016 is the year that consumers are invited to experience the promising tech for themselves. In celebration of this monumental occasion, Game Informer went hands-on with the Oculus Rift, PlayStation VR, and the Valve-powered HTC Vive to analyze this bold new vision of gaming from a gamer's perspective. Over the next 52 pages you will gain an understanding of how the technology works, read hands-on impressions of dozens of VR games, learn how the three platforms are similar and different, and ultimately understand why we're so bullish on virtual reality. Many questions and hurdles still undeniably exist for this tech, but the Game Informer staff's collective time with the three platforms reveals enormous potential and a new wellspring of creativity that game developers can tap even at this early juncture. Enjoy the feature!

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THE FUTURE OF VR



THE
YEAR
OF VR



OCULUS PREPARES FOR THE VIRTUAL FUTURE /

Visionary Palmer Luckey's dream is about to become reality



It seems like an eternity has passed since Oculus launched its successful Kickstarter in 2012. But after nearly four years of demonstration, iteration, and anticipation, in-home virtual reality is almost here. The company that started the modern VR movement isn't the same scrappy upstart that pitched its first developer kit, though.

Oculus now has the backing of social media giant Facebook after its \$2 billion acquisition. Deep pockets, an all-star roster of talent, and global reach have kept Oculus the leader in the virtual reality movement. Whether the company will be first to market is still unknown, but Oculus is definitely the team to watch.

by Michael Futter

SETTING THE STAGE

Over the past 60 years, dating back to the first United States Air Force visual flight simulator, innovators and enthusiasts have been attempting to make immersive multimedia a reality. It took a 19-year-old who put it upon himself to fix the medium's failures before people began to believe that virtual reality was viable.

Oculus founder Palmer Luckey built his first prototypes in his parents' garage leading up to development of what became the most direct predecessor to the Rift. A year later, after id Software co-founder John Carmack received one of the units, it was introduced to the world at E3 2012 running a version of Doom 3.

Just two months later, the Kickstarter campaign launched with endorsements from several gaming luminaries. While previous attempts laid the groundwork for today's technology, massive leaps in hardware engineering set the stage. According to Luckey, VR's feasibility today is due in large part to PC gamers' appetite for power.

"We have game engines that run at high frame rate. We have game engines that are made to render tons of 3D objects that are very photorealistic as fast as possible," Luckey explains. "If we didn't have those things and if we didn't have the game industry, VR would never be able to work remotely as well as it does."

Prior to the current wave of head-mounted displays, virtual reality was relegated to academic and military applications. The hardware and software designed for these purposes were narrow in focus, with access limited to a relatively small segment of the population. This cloistered approach meant that the broader development community, those who have been driving experimentation in the medium for the past few years, simply didn't have access.

Luckey believes that the Oculus Kickstarter bridged the gap between expensive, specific-use VR and the masses. Putting affordable headsets in the hands of developers was the missing piece, giving software programmers a way to build

applications without the need for a deep understanding of the hardware engineering.

"We got rid of most of the technical challenges," Luckey says. "Our goal was to make it so that any game developer – really any software developer – could make a VR application and not need to understand the really deep technical side on the VR side."

Pairing Oculus' hardware and software kit with powerful engines, like Unity and Unreal, means that developers have the same types of tools they do in two-dimensional development. The affordable price of developer kits (just \$300) meant that almost anyone could purchase one and tinker.

Beginning with Oculus' Kickstarter success, the world woke up to the realization that this time might really be it. Other contenders began popping up with their takes on head-mounted displays and virtual-reality-specific peripherals. At the time, Oculus was concerned someone rushing to market just to be first would poison the well. That has since given way to a spirit of collaboration driving forward the entire sector.

The measured approach and self-imposed demand to get virtual reality right before coming to market has been a magnet for luminaries across the game development world. In addition to hiring John Carmack, who left id Software to work full time on virtual reality as chief technical officer, Oculus has attracted former Valve developer Michael Abrash as chief scientist, creator of Valve's VR Room demo Atman Binstock as chief architect, former Steam boss Jason Holtman to develop and lead a software storefront, and Naughty Dog co-founder Jason Rubin to head up worldwide studios and first-party content. This all-star squad of hardware and software experts have one not-so-modest goal: to create an entirely new entertainment ecosystem.

PUTTING ON THE RIFT

Oculus is setting up for a two-tiered launch later in 2016. When the Rift launches, the package will include the head-mounted display, a sensor camera, integrated audio that can be



The Touch comes in pairs, designed specifically for left and right hands. The tops appear to be half a traditional gamepad with an analog stick and two buttons



Oculus founder Palmer Luckey (L) and CEO Brendan Iribe (R) - photo by Christophe Wu

removed and replaced with any headset or earbuds, and an Xbox One controller.

The single camera, a feature it shares with Sony's PlayStation VR, can be placed on a desktop easily. This is in contrast to the product of Valve's partnership with HTC, the Vive, which ships with two sensor units that must be placed at specific distances and angles in opposite corners of the space. These are designed to be mounted, placed atop bookshelves, or if necessary, on tripods.

The decision to package in a familiar gamepad was made to give developers a guaranteed install base for the input format. Oculus decided to partner with Microsoft because of its fondness for the Xbox One controller.

All of the software that is available at the Rift's launch will support a gamepad, unifying experiences. The head-mounted display will be tethered to the PC via a data cable, but since the Rift will also include the Xbox One wireless controller adapter, there won't be multiple cords to tangle.

Oculus is looking to create a breadth of content for launch that spans genres. CCP's EVE



Valkyrie continues to be one of the best-looking experiences available on the Rift. We've demoed it a number of times, but with each new experience, the space becomes more vibrant and the action more intense.

Valkyrie is an example of how far virtual reality comfort has come in the past few years. In older demos, players locked missiles onto enemies using head-tracking; looking at an enemy ship led to target acquisition. This helped mitigate potential simulation sickness, by giving players a fixed point on which to focus while looping and rolling.

The latest demo eschews that convenience, moving Valkyrie's targeting system onto a button, making it a more traditional dogfighting simulator. I felt great twisting and turning through space, with no discomfort whatsoever. Motions that would make me nauseous in real life felt natural and exhilarating. I'm not a roller coaster fan, but I think I could fly in the cockpit of a Valkyrie starfighter for hours.

Developers are also already conquering the challenge of locomotion in first person. In just 60 days of development, Epic

Games pulled together one of the most compelling VR demos we saw on Rift. Bullet Train uses a teleporting mechanic to move around the map, giving players the opportunity to stay mobile without having to run and jump through the environment as they would in a traditional first-person game.

The result is impressively smooth and not the least bit jarring. Granted, it's clear that there was no way to "lose" the short experience, but as proof of concept for what a first-person shooter can be, it's a winner. The studio has managed to retain agency without the type of movement we find in traditional shooters, which would likely be a recipe for nausea in VR.

Bullet Train works, in part, because it takes advantage of the motion tracking Touch controllers designed for immersive experiences. Together, the pair of devices resemble a traditional gamepad split in half. Each has a palm grip button, index finger trigger, thumbstick, and two face buttons. By adding a second camera identical to the one that ships with the Rift itself, software tracks hands in three dimensions as well as thumb and index finger position.



PORTABLE VR YOU CAN BUY NOW

While Rift is the crown jewel of Oculus' current portfolio, the company has already struck first thanks to a partnership with Samsung. The mobile phone maker released its portable Gear VR headset to retail in November.

Priced at \$99, Gear VR supports all of Samsung's 2015 flagship phones, regardless of size. For those that already own one, this is an affordable foray into virtual reality. It won't match the experience that Rift offers, though.

The key difference? Gear VR has no positional tracking, because there is no external camera to interpret movement in real three-dimensional space. This means you can't lean into the world and you won't see a change in elevation translated onto the display.

You can play games with the built-in trackpad, though some require a Bluetooth controller. Samsung also offers virtual tourism apps, 360-degree photos, and immersive video options. For those who like what they see, Gear VR may pave the way for Oculus to convert customers to Rift.

Gear VR is just the first portable solution. Oculus founder Palmer Luckey believes we'll eventually untether as mobile and home virtual reality converge.

"The best VR devices are going to be the ones that were designed specifically for VR from the start," he says. "I think [Google] Cardboard, Gear VR, or any of these other solutions work really well. But until you're building displays that are VR-specific, optics that are VR-specific, and even system-on-a-chip with render that is VR-specific, you're not going to get to that sunglasses form factor. You're going to end up with things that are always a series of compromises. In the long-run, I think that this is all going to converge on a single type of device that's either something you wear all the time or something you carry all the time like we carry our phones."

The Touch is Oculus' solution to one of the biggest hurdles in virtual reality development. Players expect to see their hands. Doing so creates a deeper connection to the simulated world that is further enhanced by haptic feedback that gives the player tactile response when touching a virtual object.

Touch is only the beginning, though. "As we evolve Touch, we're going to add stronger and stronger hand presence," Oculus CEO Brendan Iribe says. "This is going to get closer and closer to the real thing." The

goal is improved tracking that directly mirrors individual finger movement in real-time. That, in turn, will open the doors for developers to create new gameplay experiences we've yet to see in any format.

These motion tracking controllers won't be available for the Rift at launch. But when they do release later in the year, Oculus plans to inject a new flood of content to take advantage of the new input devices. This could eliminate the post-release slump we typically see with a hardware launch.



XBOX ONE INTEGRATION

In addition to a partnership with Microsoft that packages an Xbox One controller and wireless adapter with every Rift, the duo have teamed up for virtual console gaming. You can already stream Xbox One to Windows 10. When you add a Rift to the mix, you can bring the experience into a virtual theater.

Don't expect to wander *Fallout 4*'s wasteland in 360-degree space or climb the mountains of Siberia alongside Lara Croft, though. Instead, you are seated in a simulated auditorium, with the Xbox One image projected on a virtual two-dimensional surface.

The advantage of doing this in virtual reality is the ability to customize your play space. You can adjust the screen size to huge proportions, and even pick your seat in the auditorium.

Sitting in the back of the virtual theater while playing *Call of Duty* could give you a better perspective on the action and prevent you from getting surprised. Getting closer for a racing game may allow the windshield to fill your field of view. And for strategy fans, being able to see the subtle animations and gruesome deaths as you execute tactical brilliance may make sitting in the front row worthwhile.

The potential for these experiences come into focus when you consider social and multiplayer experiences. Down the road, you might be able to sit next to the avatar of a distant friend on a virtual couch. Each of you might see your own screen in full view, bringing together the best of split-screen gaming with a buddy without sacrificing television real estate. This won't happen right away, but the possibility for enhanced social gaming experiences are immense.

SELLING THE ILLUSION

The critical mass of hardware entrants has opened the door for conversations with an ever-growing roster of developers. Many of those discussions are being led by Jason Rubin, who co-founded *Uncharted* and *The Last of Us* developer Naughty Dog. Rubin's job at Oculus as head of worldwide studios is to create a compelling slate of first-party content, managing relationships with studios, and building the crucial launch lineup.

Rubin's experience as a developer and studio head gives weight to his enthusiasm for the medium. He sees VR as a massive leap forward for the interactive entertainment industry.

"I have been in the game industry for 30 years, and at various times, we've gotten new platforms. This one is the most different from any previous platform that I've ever seen," Rubin says. "So when you were going from arcade to Apple II or Apple II to early console or early consoles to later consoles or later

consoles to 3D – that was a big shift, that was a big one – 3D to high-end 3D and to touch – that was a big one, too, going to mobile platforms. This is the biggest jump ever. Any game maker would know the minute you see this thing that this is going to be huge. It's going to change the way games are played and viewed and change the types of games that are out there."

Rubin says software innovation in the VR space is currently outpacing development cycles, such that new techniques are emerging before studios are even able to complete a single game.

"There's already been three generations of displayed improvement," Rubin says. "The first was shooting as a turret, standing in place. That was *Damaged Core* at E3. The second iteration, we had Touch controllers shooting at things. You could think of *Arizona Sunshine*, which is coming out on both of our platforms, where you're standing in place and zombies are coming at you,



but now the guns are in your hands. That was a second generation first-person shooter. The third generation of first-person shooter is *Bullet Train*, which we showed at Oculus Connect. You are now moving, but you're moving in warps. I've seen the fourth generation of first-person shooter that allows you to control yourself a lot more like current-generation first-person shooters. All of that has happened in a year, and we haven't even released the hardware."

On day one, users will have a breadth of genres and intensities from which to choose. The launch lineup will check some of the boxes that we expect from console launches, but Oculus isn't ready to commit to a specific set of titles. We do know that *Three One Zero's* *Adr1ft* and *Sanzaru's* *VR Sports Challenge* will be among them, though.

Rubin sees the launch lineup as the beginning of a dialogue with consumers. Developers and platform holders are listening and learning what gamers take

to in order to better understand what works and what doesn't in this new media format.

"For our launch lineup, I look to create a wide variety of experiences and test out all of the things we can think of in a reasonable amount of time that might make people really excited in VR," Rubin says. "That way we can see what people take to and what people don't take to, but give enough of a variety that something will be exciting. It would have been easy to say, 'Here are three genres. Let's hit 'em really hard. Let's put all our effort in these three genres.' We would have been giving up on a lot of things that might have been interesting."

Much of what we're seeing early on are relatively short games when compared to their console counterparts, but Rubin expects it won't be terribly long before we start seeing the huge experiences to which gamers are accustomed. He tells us that we'll see the equivalents of *Skyrim* and *World of Warcraft* before we know it.



BIG PUBLISHERS: MOVE NOW OR WAIT?

Virtual reality is likely to be driven primarily by small developers willing to take the risk on a commercially untested medium. Publishers like Activision, EA, and Take-Two are holding off on announcing virtual reality projects to see how consumers take to the hardware.

Even those that aren't diving in right now have let analysts know that they're watching the market closely. EA CEO Andrew Wilson stated in October he is personally very bullish on the technology. Take-Two is in the research and development phase, suggesting that should the market develop, it will be ready to participate.

Others have decided to strike early in hopes of planting a flag in the space and establishing profitable franchises early. Ubisoft has already shared its concepts with the media and committed to a PlayStation VR project, with a compatible version of this year's *Trackmania Turbo*.

Capcom has confirmed that its core *Resident Evil* team is focusing on virtual reality projects, and Square Enix plans to explore the medium. The *Final Fantasy* publisher appeared on a list of partners at Oculus' E3 2015 press conference.

Unity CEO John Riccitiello urges developers to temper their expectations. "All of you that are content creators, you should creatively experiment a lot and don't rush," he said at a recent VR event in San Francisco. "It's not a consumer market. You're not going to make any money in 2016 on dollars per unit or units per dollar. It's going to be slow next year. Take your time to build something so cool that it has a chance to be the beginning of something when you iterate a second or third time."

Analysts disagree over the potential of virtual reality at retail. Superdata research predicts the segment will be worth \$5.1 billion by the end of 2016, with software representing \$6.1 billion of a total \$8.9 billion for the virtual reality market the following year. Investment bank Piper Jaffray is significantly more conservative, expecting VR content to be a much slower burn. The firm believes gaming, film, live event viewership, and other content will reach \$5.8 billion in 2025.

Wedbush Securities analyst Michael Pachter sees Hollywood as the future for the format, not gaming. Speaking at the Cloud Gaming Summit, he suggested that \$500 or \$1,000 headsets will languish on retail shelves. He believes a significantly lower price point is necessary for adoption.

BUILDING THE METAVERSE

In addition to game content, virtual travel, and educational opportunities, virtual reality has the capacity to revolutionize how we communicate. Luckey believes virtual reality marks a significant divergence from the trend in human interaction.

"VR is the first communication technology in a long time that wasn't designed to make communication more convenient or cheaper. It's designed to make it better," he says. "I really think that VR is going to make for the most human digital communication that we can possibly have. I believe we're going to get to the point where it's as real as real life in many scenarios. Clearly that's going to be a better form of communication than even the best of what we have today."

In order for us to get there though, VR pioneers are going to need to first envision and then build a space for people to congregate. Right now, no one knows what shape that will take. The science-fiction envisioning of the metaverse is a glorious concept, but may not be what we'll actually want to use for practical communication.

"I don't think anyone has a cohesive vision for how the metaverse is going to play out," Luckey says. "It would be like someone in the '80s trying to predict the modern Internet. It truly was inconceivable, a lot of these things. We get bits and pieces of it that we know are going to happen, like we know we're going to have collaborative, shared spaces. We know we're going to be jumping from experience to experience. We know that eventually there's going to be things that merge the real world with the virtual world seamlessly. We don't know exactly how we're going to use those capabilities, though."

One of the big challenges for reaching a point in which VR communication becomes commonplace is in how people will be represented digitally. The uncanny valley, roboticist Masahiro Mori's explanation for why close-but-not-perfect human faces are disquieting for humans, remains a hurdle for programmers, but one potentially close to a solution.

Nvidia debuted its Face Works demo nearly three years ago, marking massive advancements in rendering human faces. The challenge right now is having computing power that allows high fidelity facial representations to exist alongside other assets. Luckey tells us it's a matter of resource allocation, and developers have to balance realistic avatars with gameplay, environment, effects, and everything else that requires computational power.

When we do reach the point at which computers are up to the task, Luckey believes many will not choose realistic representations. As people often do in contemporary character creators, users will embrace the fantasy.

"People want to play as something better. They want to be better than they are in real life," he says. "In VR, you're going to see an extension of that. People will represent themselves as who they want to be or who they think themselves as rather than how they are physically."



Ready Player One by Ernest Cline is based on a gaming-centric metaverse

"They're coming. There's absolutely no question that they're coming," Rubin says. "When they come, they'll be that much more immersive and that much more involving than the Skyrim and the WoWs, because those are looking into another world through a window. Now you're going to be stepping into that world yourself."

They won't be exact translations of the 2D immersive experiences; some elements simply don't translate well. For instance, one of the first experiences many people have in Skyrim is an attack by a pack of wolves. That kind of intimate violence won't work in virtual reality.

"The language of VR is being built. There will be things that we don't do," Rubin says. "We won't have you whip around and get thrashed, because that's an uncomfortable feeling. However, there will be very good ways of showing you've been attacked by a wolf. The

same way that when you're sniped in Battlefield, you get the red in the corner. What the hell is the red? In real life, what is the red? It makes no sense, but you never think about that. It just is the way you represent it in a game like that. We will have ways to represent the wolf that don't make you uncomfortable but are accepted as being eaten by a wolf."

For those that prefer to test out tech demos and unproven ideas, Oculus will continue to operate its experimental Share platform. It will exist under a new name, though: Oculus Concepts. This breeding ground for innovation will continue to play host to in-development games, tech demos, and concept pieces.

It will continue to be a resource for the development community and a playground for end-users. However, Rubin doesn't believe anyone will feel compelled to go there because of a lack of curated, complete content.



"My goal is that you won't go to Concepts unless that's what you're in for and that's your thing. There should be enough top-line content in our store to keep you interested and busy. Having said that, if you're the kind of person that likes experimenting on the edges and going beyond 'I like to see all types of games,' but really want to get out there and see what's being worked on even if it's not fully polished and a little rough around the edges because you're curious about game making, that's where Concepts come in."

FULFILLING THE PROMISE

In just a few months, Oculus will bring its carefully cultivated vision to the masses. A number of significant questions still remain, including the price.

We know that those looking to purchase a new computer with an Oculus Rift will be able to spend less than \$1,500. Oculus plans to release bundles, but

Irbe assures us that those who would prefer to build their own PC can do so for significantly less than that price point. Oculus recommends a system using a Nvidia GTX 970 or AMD 290 video card or better, Intel i5-4590 processor equivalent or better, 8GB+ of RAM, compatible HDMI 1.3 video output, two USB 3.0 ports, and Windows 7 SP1 or newer.

The unknown of the stand-alone cost is a major factor keeping the technology at arm's length from even early adopters, but Oculus isn't alone in remaining quiet about that crucial detail. The company also has to make the case for virtual reality to those that have never experienced it or even understand why it's something they might want to bring into their homes.

"I think a lot of people will get it at friends' houses who are early adopters," says Irbe. "It's like where you get 4K TV for the first time. You get it at a friend's house who is an enthusiast."

Likewise, retailers are going to be a big part of giving people their first virtual reality experiences, but that means going through the expense of training in-store associates on how to best demo the technology and eventually the Touch controllers, carving out retail space for the products, and ensuring a level of comfort for customers. Irbe says that short, stationary demos (like those that premiered with the Crescent Bay prototype at Oculus Connect in 2014) are a good way to introduce people to immersive media.

The fact that there are three major competitors entering the market within months, possibly weeks, doesn't concern Oculus. Whether someone tries PlayStation VR, Rift, or Vive first doesn't matter as much as that person coming away wanting more.

"There is a very small audience of people that are already going to buy VR, that are already totally convinced. We are really only competing amongst

each other for those people," Luckey says. "The bigger battle is this huge, vast community of people that don't know what VR is, have never heard of it, or they've heard of it but don't know why they'd want to use it. Those are the people that we're trying to get to understand VR."

While Oculus isn't planning to directly compete in earnest in the early days, it might be because it has major competitive advantages. The ability to innovate and iterate quickly because of being based on PC means it's more nimble than Sony. The flexible room requirements that are enabled by a single camera rather than Valve's two sensors requiring mounting or intrusive tripods makes Rift less daunting for consumers.

The biggest challenge is getting as many people into a VR demo as possible. Figuring out how best to do that is the key for the medium, and one all three major competitors are working together to solve. ♦





THE
YEAR
OF VR



MAKING ROOM FOR THE VIVE /

*Valve and HTC think they have
a better way to do VR*

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Technology constantly re-shapes the rooms in our homes. A few centuries ago, our living rooms were filled with fine artwork, musical instruments, and other worldly trinkets designed to impress and entertain dinner guests. But when the radio showed up – promising a steady stream of news and gossip from the outside world – we made room for it. When the television provided the opportunity to bring the cinema into our homes, we made room for it. When the personal computer promised to streamline our workload and plug us into a larger, connected world, we made room for it. Valve and HTC are banking on the idea that we're ready to make room in our homes for virtual reality as well.

For years, the creators of Half-Life and Portal have been developing a virtual reality system that is a little different than the technology Oculus and Sony have created. Valve's VR technology asks users to open up 25 square meters of space in their home. In return it offers unparalleled head tracking and immerses users in unique virtual worlds. The technology is impressive, but will Valve be able to trade new worlds for a section of their users' homes?

by Ben Reeves

LEARNING TO LOVE VR

In early 2012, Valve established a hardware-research group with the goal of developing projects such as the Steam Machine and Steam Controller (see page 9). The team was also excited to work with augmented reality technology, but quickly came to the conclusion that virtual reality was a more exciting project. All the pieces for a great virtual reality headset were out there, but nobody was putting them together into a single headset.

The team spent 18 months buying pre-existing virtual reality technology off eBay and hacking it into a new patchwork VR headset. However, not everyone at Valve was convinced the project was worth the company's time.

Ken Birdwell was one of the naysayers. A Valve lifer, Birdwell worked with Valve's CEO Gabe Newell at Microsoft in the mid-'90s, and was part of the initial team that founded the company. Birdwell created Valve's proprietary skeletal-animation system, which allowed the characters in the original Half-Life to perform fluid yet complex animations, and then helped design the character Alyx for Half-Life 2. During his tenure at the company, Birdwell has had a hand in everything from Half-Life to Left 4 Dead to Portal 2. But he hated VR.

"I tried my first VR headset in 1985 at [the computer graphics conference] SIGGRAPH," Birdwell recalls. "I waited in line for 45 minutes to put on that headset, and it totally sucked. It was a horrible experience. I got sick almost instantly. After that, I tried VR headsets every year or two for about 10 years, and then finally gave up on it in the mid '90s."

Despite his reservations, Valve wasn't giving up on VR, so Birdwell decided he should at least find out what his company was working on. Once Valve's experimental-hardware group had a working prototype, Birdwell walked into their office and demanded a demo.

"I was ready to say a bunch of blandly polite things and not discourage them too badly, but when I put on the headset it was just amazing," Birdwell says. "I was standing in a badly

textured room, on a badly textured box floating up in space. I could feel this heavy wired contraption on my head, and I could hear people talking behind me. Everything about it was wrong from a technical point of view, but when someone said, 'Step off the ledge,' I couldn't. My leg wouldn't move. I started laughing, because weird parts of my brain said, 'No, it's real!'"

That moment was a revelation for Birdwell. Not only did VR finally work, he knew he had to be involved with this project. Valve famously doesn't have job titles, but Birdwell is now the closest thing the company has to a VR project manager. For the last three years, Birdwell has helped shape the company's vision for the future of virtual reality: a completely immersive world that players can physically walk around and even touch.

VR EVANGELISTS

The word "immersive" has been drained of much of its power in the gaming industry, but it's hard to describe Valve's vision for VR any other way. The company wasn't content to allow users to simply look into virtual worlds. Unlike the Oculus Rift or PlayStation VR sets – which offer largely stationary experiences – Valve wants users to stand up and walk around their virtual landscapes. Of course, this vision requires users to create a square of empty space (five meters per side) somewhere in their homes and then place at least two sensors on opposite corners of that room.

Walking through virtual worlds is only part of what makes Valve's technology so immersive. The other half is an input system that allows users to reach into the digital world and manipulate its environment. To allow for this, Valve developed two motion-sensing wands, complete with triggers and circular touchpads, which allow the developers to simulate everything from using a paint brush to firing a gun.

Valve wasn't shy about sharing its VR technology, either. Early on, the company hosted a virtual reality day, where it invited developers from across the country to come to its office and experiment with its new

technology. To further help proselytize its vision for VR, Valve built several VR rooms across the country, which it used to demo the technology for companies like Starbreeze and Oculus.

"We demoed for everybody: senior executives, industry insiders, your grandparents," Birdwell says. "We spent thousands of hours showing our VR setup to anybody who showed up. After the demo, most people say, 'This is amazing!' But after HTC had done it, they said, 'We want to build one.'"

A week after HTC's CEO and president, Cher Wang, received Valve's demo, the Taiwanese smartphone manufacturer sent 10 engineers from its Taipei headquarters to Seattle to work alongside Valve's VR team. Six months later, HTC had early prototypes of a headset it was now calling the Vive to send to developers and game makers.

"They work with materials that we have never been able to solve," Birdwell says. "They figured out how to make the headset adjustable. Ours was always rigid, and the straps were really uncomfortable. They have a tremendous background in material science, so they can casually do things that we would never even attempt."

However, as HTC's production pipeline ramped up and both companies looked forward to a 2016 release, it became clear that Valve wasn't done selling its vision. If the Vive was going to set itself apart from the Oculus Rifts and PlayStation VRs of the world, Valve would have to convince several developers to make use of the Vive's unique technology. Valve seems pretty

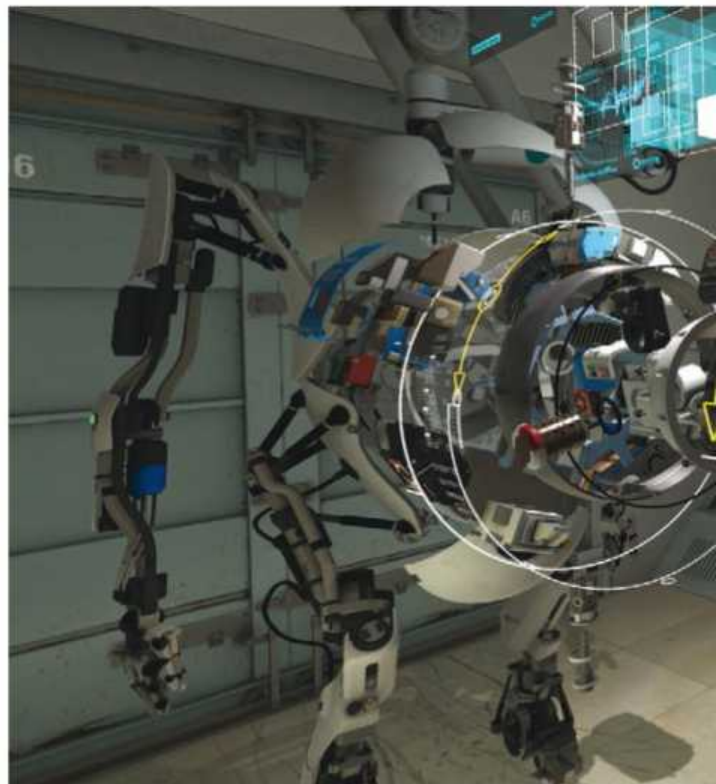
happy with the Vive's upcoming slate of software, but most of these upcoming titles are indie projects or ports of non-VR games like Team Fortress 2, Final Fantasy XIII-2, and Pro Evolution Soccer 2015.

Fortunately, earlier this year Epic Games announced support for Valve's SteamVR software, meaning it will be easy for developers to create games for the Vive using Unreal Engine 4. Valve also says that it's fairly easy for developers to port projects designed for the Oculus Rift over to the Vive, and the company plans to support Linux and Mac OS as well as Windows. All of this should make it easier for developers to get their games on Valve's hardware, and hopefully attract new developers to the system, but only time will tell if developers actually make use of the extra room Valve has given them.

TOUCHING THE FUTURE

In an effort to figure out what works in VR, Valve has created a multitude of tech demos showcasing the strengths of VR. During my visit to the studio for this story, I got hands on with several of these experiences and experimented with the latest Vive prototype.

The headset itself is extremely comfortable even when it's strapped snugly to your head, so it was easy to forget I was even wearing one, except when I occasionally stepped on the cord that ran to the computer. Going forward, one of the biggest improvements Valve can make to the Vive would be to get rid of that cord – or at least moving it up and out of the way. A second



upgrade would be to add a built-in audio output; Vive users currently have to use their own set of headphones to hear what is happening in VR space.

New users will initially feel nervous about walking around technically blindfolded, but you shouldn't have to worry about running into walls thanks to Valve's chaperone system. This silent assistant throws up a holographic fence whenever you approach the limits of your play space. After about a minute of adjusting to this feature, I was confidently strolling through virtual worlds.

Valve is also still working on a pass-through solution that will allow users to see the real world without taking off their headsets, but the Vive helps mitigate this need by tracking your controller wands as well as your headset. As soon as I put on the Vive, I could see digital versions of my wands sitting in the middle of empty virtual space. The placement of these digital models corresponds exactly to their real-life doppelgangers. So while it might still be a bit of a trick to find your soda while wearing a VR headset, you'll

never have to worry about losing your controllers.

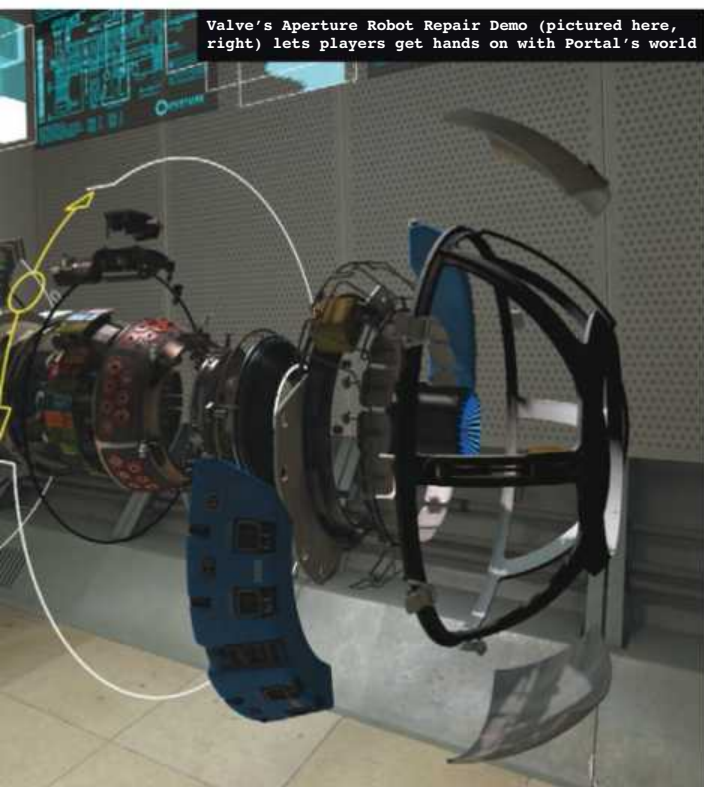
The wands themselves are comfortable, but I wonder if they need more inputs. The touch pads can be programmed to function in a variety of ways, but the triggers are the only buttons on these remotes, which might make it hard for designers to create more traditional game experiences.

One of the Vive's most memorable demos is Aperture Robot Repair, which features Portal's familiar wit and charm (even if it lacks the puzzles). The demo begins with a computerized voice asking me to open a series of drawers. When I open a drawer that contains a miniature office scene featuring tiny stick-figure workers typing away in miniature cubicles, the computerized voice informs me that, "You have just interfered with an Aperture Science pocket-universe capsule. You are now their god. Please close the door to initiate pocket-universe contingency protocols." Once I close the drawer, the voice comes back and says, "Good. Contaminated pocket-universe has been incinerated. Opening



Owned by Google, Tilt Brush is a painting application that allows users to draw in three dimensions

Valve's Aperture Robot Repair Demo (pictured here, right) lets players get hands on with Portal's world



drawers has now been removed from your list of responsibilities.”

After the drawer incident, Portal's robot co-op buddy, Atlas, enters the room, and I am tasked with repairing him. After spending a few minutes pulling apart his electronic guts, it becomes clear that I am destined to fail. Then the walls fall down, revealing the menacing form of GLaDOS, who locks me away in a padded cell. Overall, interacting with Portal's world in this new way was exhilarating. GLaDOS's towering form seemed more threatening than ever before, and manipulating objects in the environment felt completely natural.

Some of the Vive's other demos allow users to experience the daunting scale of a blue whale, experiment with cooking various recipes in a kitchen, and simply draw in the 3D space around them using light. One Valve programmer used photos from the Martian rover to generate a true-to-life model of the red planet's landscape, allowing users to simulate humanity's first walk on Mars.

Many of these demos sound simple, even benign, but they

are a touch more immersive than many of the Oculus and PlayStation VR demos I've experienced; walking around a virtual world adds greatly to your sense of presence.

“We're still in that mode of trying to figure out what we do with this,” Birdwell says. “We have endless experiments, and they're neat things, but we still have to figure out how we put this into a narrative. How do we pull the player through this immersion? If players actually did all of the actions from Half-Life in VR, they'd be fatigued in five minutes. It doesn't mean we can't use that fiction; we just have to figure out a new way to approach it.”

A BRAND NEW EXPERIENCE

Valve is passionate about the future of VR, and it has built an impressive piece of technology to help make that future a reality. Its system allows users to experience a greater degree of immersion than its competitor's technology, and if Valve properly leverages its Half-Life, Left 4 Dead, and Portal brands it could encourage consumers and developers to support its

vision for virtual reality.

Unfortunately, unknowns still surround the launch of the Vive. Will consumers be turned off by the Vive's space requirements? Can Valve and HTC package all of this tech into a bundle that is priced competitively with other systems on the market? Has Valve convinced enough developers to make proper use of its system, or will the Vive's launch lineup be full of Oculus Rift ports?

Valve wouldn't share its answers to those questions yet, but its VR team seems sure of one thing. “When you show someone good VR, it changes their perspective on things,” Birdwell says. “Traditional video games are awesome, but I've played all of them and they are just refinements at this point. I haven't really seen anything new in 10 years. It's not that

people haven't been doing amazing work; it's just that everybody already knows what modern video games look like. Everything that comes out now gets judged against every game before it. In VR you don't get to do that, because it's a stunning realization of, ‘I've never done this before!’”

To experience Valve's vision for VR, we will have to make a bit of a commitment. Not only will we have to set up two sensors on either side of our gaming rooms, but we will have to clear away our coffee tables and shoo away our household pets so they don't get in the way while we explore VR's digital frontier. We're going to need to rearrange our homes to take full advantage of the Vive, but if Valve's vision for virtual reality is as powerful as the company believes then we'll make room. ♦

ROOM TO MOVE

Some of the Vive's critics have decried the fact that users must create a five-by-five square of space in order make proper use of the headset. However, Valve doesn't feel like this will be much of an issue for most consumers. For one, the Vive's set-up is reportedly less complicated than a traditional surround-sound system. But more importantly, consumers who don't have a lot of room in their homes can set up the Vive's sensors with less than 25 square meters of space. In fact, Valve says that its tracking system will work within a shorter distance than Microsoft's Kinect.

“The five-meter by five-meter square is kind of the outer limit of where this system tracks really well,” Birdwell says. “The reality is even being able to walk around in a two-meter by two-meter space really adds to the sense of presence in a way that sitting in a chair doesn't. That sense of being becomes an incredibly compelling experience, and people pay for compelling experiences.”



THE
YEAR
OF VR



THE CONSOLE CONTENDER /

*How Sony is using PlayStation to make a play
for VR dominance*

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While gamers with high-powered PCs debate between the virtual reality offerings by Oculus and HTC, Sony has entered the race as a wild-card. Originally known as "Project Morpheus," the company dropped the codename in favor of the simplicity of PlayStation VR. With recognizable nomenclature in tow, Sony enters the virtual ring as the first console manufacturer to offer a first-party VR headset. Waiting could prove to be the savvier move for Microsoft, but with great risk comes the potential of great reward. Sony has jumped in with both feet and is in a real position to become a thought leader and directly influence the direction of its competitors. Though it doesn't have Microsoft to worry about for the time being, Sony must now focus on competing with the more versatile PC-tied headsets while avoiding the pitfalls of past underwhelming peripherals and platforms.

by Brian Shea

SETTING PLAYSTATION VR APART

PlayStation VR is unique from other VR options being readied in that it's the only platform that tethers to a console. This means PlayStation 4 owners won't constantly be asking themselves if their system is powerful enough to enjoy the newest games.

As of November, Sony has sold 30.2 million PS4s. This could help Sony market PlayStation VR to its already large player base, as the plug-and-play nature of consoles could help make it a more attractive option early on for the mainstream audience. Of course, a large number of PC owners – a much larger install base – already own rigs capable of running the Oculus Rift or HTC Vive. Because of this, Sony must put an emphasis on its accessibility, its plug-and-play ability, and its name recognition with the mainstream audience.

When talking to Shuhei Yoshida, Sony's president of worldwide studios for Sony Computer Entertainment, it's apparent that the company is aware of its advantages. "You don't need any technical knowledge to use it," he says. "We want people to just buy PS VR and connect it to a PS4 and enjoy VR experiences."

LURING DEVELOPERS TO VR

The allure of this new technology has brought developers of different sizes into the fray. We already know some of the games that will arrive on PlayStation VR, and with several months to go prior to launch during the first half of 2016, it wouldn't be surprising to see more big-name studios get on board. Despite this, Sony may need to grease the wheels by investing more in third-party developer projects.

Ben Throop, creator of the dystopian soccer-school simulator *Headmaster*, was concerned about the financial viability until he started noticing a trend, starting at Game Developers Conference in 2015 when Oculus, HTC, and Sony all focused heavily on virtual reality. "When I started work on *Headmaster* in the fall of 2014 there was no market and no timeline," he says. "Despite that uncertainty the potential for the technology was very,

very compelling."

Another studio that is developing a PlayStation VR game is Supermassive, the developer behind one of the biggest surprise hits of 2015, *Until Dawn*. With *Until Dawn: Rush of Blood*, the studio plans to deliver an on-rails arcade shooter experience in the fright-filled universe of *Until Dawn*. "I think we are just at the beginning of really exploring what VR is going to bring to gaming," says *Rush of Blood* executive producer Simon Harris. "[A] VR experience is truly unlike any gaming experience players have had before. The feeling of being 'in' a world and having the simple action of moving and looking around is incredible and will deliver a level of gaming and interactivity we haven't had previously."

Tom Jones of Guerrilla Cambridge, which is working on a mech-based sports shooter called *Rigs*, is excited at the prospects of being one of the trailblazers of VR development. "It's great to see so many games and experiences being developed, because the boundaries of what is possible are being pushed all the time," he says. "As a developer, it's brilliant to be involved in helping to push the technology."

At this point many of the studios with announced PlayStation VR projects have backgrounds working with Vita or PlayStation Move. Most of Sony's most well-known internal studios like SCE Santa Monica, Sucker Punch, and Naughty Dog have remained on the sidelines to this point.

According to Yoshida, the viability and progression of VR as a whole will be crucial to attracting those triple-A experiences. "We are such a big fan of small, new novelties and creative games coming from indie communities," he says. "Of course, we'd like to see our major triple-A publishers to start working on PS VR content as well, and you have seen some efforts and demos released, especially from Japanese publishers like Bandai Namco, Capcom, Sega, and Square Enix. That's great, and I hope more will be done; like Ubisoft was showing *Trackmania* on PS VR during E3 already. The larger publishers, because



of their enormous resources, tend to wait for the market to mature before they can justify investing on a larger scale, but I'm very optimistic that this will come."

EXPERIENCING PLAYSTATION VR

Several PlayStation VR developers visited us recently to show off their latest demos for projects that could be coming to the platform when it launches this year. The PS VR headset is comfortable, reasonably light, and easy to put on and take off once you know how to do it. The headset feels like just the right weight, where it has some mass to it while not feeling too heavy when I turn my head to look at something.

The headset feels almost like an extension of my body once it's on. When I first put the PS VR on, the screen was too close to my face, giving me some slight discomfort with my eyelashes. By pressing in one button and pulling the face of the headset away from my head, I calibrated the distance of the screen from my eyes in a matter

of seconds. Using a separate knob, I tightened the headset to secure it to my head.

Unlike the consumer model of the Rift, the PlayStation VR headset does not include built-in headphones, meaning that once you're strapped in to the headset, you must still put on a pair of headphones. This could be less than ideal for the retail model since you aren't aware of your surroundings once you are wearing the headset, so grabbing your controller and headset could prove tricky.

During my PlayStation VR demos, the in-experience view is often calibrated within the software. If the camera fails to track where you're looking you can press a dedicated button to reset the calibration.

The first tech demo I tried, a Capcom-developed seated experience called *The Kitchen*, uses a DualShock 4 controller. As the demo begins, I'm sitting in a dilapidated apartment kitchen. Dust floats in the dim light. The electric eye of a tripod camera glares at me as I helplessly sit in a chair in the center

of the room. I look down to see my hands bound. A man lays motionless on the floor to the left of me, combining with the environment to give it a similar feel to that of a *Saw* movie. As I turn my head, the in-game camera tracks precisely what I do. It feels natural and I can't perceive any input latency in the head-tracking. I look around for anything that could free me, but I'm helpless. All I can do is lift my hands to knock over the camera. This does little to improve my situation, but it further immerses me in the experience by creating that feeling of presence.

The man on the floor lets out a groan and struggles to his feet. He grasps a machete, which he brings dangerously close to my lap, causing me to wince. His intentions are unclear at first. Is he going to attack me? Thankfully, he begins trying to cut me free – I might be out of the woods soon. Before he can get my hands loose, however, a demonic woman that looks straight out of a Japanese horror movie like *Ju-On* attacks

him. He does his best to resist, but she pulls him around the corner. I have no idea what she's doing to him, but it doesn't sound pleasant. My fears are confirmed as the screams stop and the man's severed head comes hurling around the corner in my direction.

I'm still helplessly seated with no idea what to do, so I continue looking around the environment. I begin hearing noises all around me as I keep my head on a swivel. The room goes eerily quiet, but before long, the creature's bony, decrepit hands are wrapped around my face. I look up and see the monster staring back at me. I know it's not real, but the close proximity of this creature on top of me is enough to make me feel uncomfortable. She licks the machete and drives it into my leg, making my leg move ever so slightly as I instinctually try to avoid the blade. The screen fades to black and the demo ends.

While *The Kitchen* demo is not so much of a game as it is a horror experience, it aptly demonstrates the base abilities



The most intense scene of the London Heist demo involved speeding down the highway in an SUV and taking out enemies

of PlayStation VR. I understand how the headset can fool my brain by transporting me to a new world, as well as how the head-tracking works.

My understanding of PlayStation VR's capabilities is further deepened with my next demo, London Heist from SCE London Studio. The shooter uses two PlayStation Move wands, which are represented by my hands on the screen. This gives me a point of reference and allows me to interact with objects in the environment.

The first scene is the same one we experienced at this year's GDC and wrote about in issue 265. A large, intimidating man interrogates me before flashing back to a scene where I must duck in real life to put my character into cover and return fire using the Move controllers in order to clear a room. Using my left hand I grab new clips and load them into the gun I'm holding in my right hand as it runs out of bullets. There is a slight disconnect in the motion and the objects feel a little floaty, much like Move games. If they

can improve the fidelity of the Move controllers with PlayStation VR, the tech is a great fit for first-person shooting. Soon enough, the room is clear and I move on to the next scene.

The final scene of the London Heist demo places me in the passenger seat of an SUV with the large man who was interrogating me just two scenes prior. I don't know if this takes place before or after that scene within the story, but the relationship is clearly on better terms in this moment. He drives us at blistering speeds down the highway as our enemies chase us. He tells me to look in the glovebox, so I use the Move controllers to pop it open. I find an SMG and several magazines for it. Things are about to get fun.

In typical getaway fashion, enemies pull up alongside our SUV and I'm tasked with removing them from the chase. With a standard game, this would be as simple as swinging my right thumb back and forth, but with this being a VR game, I need to keep my head moving left and right constantly. As the enemies



enter into my periphery, my instincts play perfectly as I swing my arm up and aim down the sights of my SMG.

For the enemies on motorcycles, it's as easy as aiming at the tires, but some of the larger vehicles require me to shoot the vehicle until it's too damaged to keep in the action. This continues for several minutes until the highway empties. Just when we think we're in the clear, a large fortified vehicle pulls up in front of us and the back door opens. Inside, a heavily armored man holding a minigun greets us. Even though the character before me is hardly photorealistic, it feels more ominous in a way standard console experiences rarely can. Panicked, I point my gun right at him, but the screen cuts to black and the demo ends. The London Heist demo is intense, diverse, and puts on full display how this technology can work for the big action games we've come to know outside of virtual reality.

After starting out on the more intense end of the spectrum, I moved on to a more lighthearted demo. Playroom VR, from SCE

Japan, offers two multiplayer minigames that let me play with up to four people who are using DualShock 4 controllers and the television instead of the VR headset. Monster Escape puts me in the shoes of an armless, Loch Ness Monster-like serpent as I move through an on-rails segment in a city. I don't have any controller, but by leaning, I can destroy buildings, attack the hovering helicopters like Godzilla and dodge the incoming fire. Through the headset, I see from the perspective of the monster as it chases the other players down the narrow path. On the TV, the rest of the players see from their perspective so they can better dodge my attacks and try and counter with their own.

As I reach the end of the city peninsula, the players using the controllers and TV can have their revenge. Using those same movements, I must dodge their attacks for long enough that the platform they're on collapses. Sadly, my dodges fail and my monster loses the battle, which ends with me being hurled into outer space.

WHAT KIND OF ROOM DO YOU NEED?

Though a part of our time with SCE London Studio's London Heist demo had us walking a few steps in different directions, Sony's Magic Labs director and PlayStation VR creator Richard Marks says that the team designed PS VR to be a largely stationary experience. "If you're seated, you don't really need much space. You're not moving so much," he says. "If you're standing, you need just as much space as you need to swing your arms and lean a little bit. So it tends to be that you need your arm's length reach around you open. If you're seated it's pretty easy usually. It is using the PlayStation Camera to do this, so it needs to be about six to eight feet away."

Another minigame in the Playroom VR suite is Cat and Mouse, where the players using the TV screen control mice trying to collect all of the food items on the floor. The player with the VR headset controls a cat, which is hiding behind the see-through curtain ready to pounce on its prey. By leaning forward, the player with the VR headset pokes the cat's head through the curtain. Any mouse still moving when the cat pokes its head out is captured by the cat and removed from the kitchen, giving it the familiarity of the children's game "Red Light, Green Light."

Neither of the Playroom demos show off any great depth of gameplay, but they demonstrate how one VR headset can spell fun for more than just the person wearing it.

While those demos all touched on the experiential aspect of VR, and examples of asynchronous multiplayer and PS Move implementation, developers are also working on a number of controller-based games for PlayStation VR. One such game is Super Hypercube, which is being developed by Kokoromi and published by Polytron, the studio behind the hit game Fez.

Super Hypercube gives you a shape that you must rotate to fit through a hole in a rapidly approaching wall. The default perspective blocks your view of the

hole, and that's where PlayStation VR comes into play. Using the head-tracking, I peer around the shape to spy the configuration of the hole. I use the shoulder buttons to rotate the block to fit in the opening and I move on to the next round.

With each passing round, another cube is added to the growing structure. Before I know it, my puzzle piece has 18 cubes forming an odd shape. I peek around the side of the piece to see the hole, but I just can't figure it out before my hulking structure crashes into the wall, shedding much of what I had built up over the course of the game. It's a not the most involved title when it comes to showing of the headset's capabilities, but it highlights how motion doesn't necessarily have to be the centermost mechanic of a VR experience.

AVOIDING PREVIOUS PITFALLS

Sony has been burned in the past by investing too heavily in re-emerging technology. Most notably, Sony CEO Howard Stringer tried to make 3D technology a centerpiece across its television and PlayStation brands. Ultimately, tepid consumer and developer interest cost him his job. With consumers wary of VR being another gimmick, Sony must reassure its potential user base that it is not just a passing fad like 3D.



Yoshida says there is one major difference between SCE's past investment in 3D televisions and its current venture into VR. "[3D stereoscopic games] was actually the consumer electronics industry initiative, not Sony Computer Entertainment's initiative," he says. "It was becoming a large thing from the TV manufacturer's industry, and of course Sony has the Bravia team. We were like, 'Yeah, we could do it for PS3, so why not?' They have moved on to other things like 4K or now some Smart TV or the 'in thing' of the day. So that's why we are like, 'Oh, they have moved on. Why do we have to keep trying?' But VR is definitely our initiative."

The PlayStation 3 also possessed a stable of failed peripherals that at one point seemed like they could be game changing. From PlayStation Eye to the Wonderbook peripheral, the PS3 didn't have a great track record with keeping its peripherals alive over the long-term. Even the PlayStation Move, which attempted to capitalize on the motion-control craze of last-gen, failed to find a real audience and saw its support flounder in relatively short order.

Richard Marks, the director of PlayStation's Magic Labs research division and one of the key people in creating Sony's headset, looks at PlayStation VR in a different light than he

HOW MUCH WILL IT COST?

When asked how much PlayStation VR will cost, Sony's president of worldwide studios for Sony Computer Entertainment Shuhei Yoshida says the team is still finalizing a lot of information regarding the launch. "We're working on the price-point and what's in the box and the launch lineup and, of course, launch day, and we have yet to be ready to announce them," he says. "We are still saying the first half of 2016 and the price of PS VR might be similar to the cost of a new console."



Playroom VR allows for asynchronous multiplayer across a variety of different games

Until Dawn: Rush of Blood is an on-rails shooter set in the Until Dawn universe, but players can still expect the horror elements to carry over



does the underperforming peripherals of Sony's past. "This one is less like a peripheral and more like a platform of its own," he says. "You pretty much have to make the content to match it, so it is a really different experience, because the content is made for it. So it's like a new platform. In a lot of the cases of peripherals, either they're tied to one game or they're tied to one company and they aren't really compatible with anything else, so you have one company trying to get a bunch of content made for this one device and that's asking quite a bit of a game developer for that to happen."

Marks argues that making a game for PlayStation VR or virtual reality in general is more financially viable thanks to the multifaceted nature of the platforms that will be available. "We've tried, and in some cases have been successful, in some cases not," he says. "Kinect or the Wii Fit Board, you could argue on those, whether those were successful or not. They

have some level of success. But in this case, there are multiple platforms for VR that are occurring simultaneously, so a content developer can make things and potentially see it go across multiple platforms. And that helps them out a lot. It helps them be able to make it economically viable to make a game for it."

THE WILDCARD

Despite Sony's pledged support, several questions still remain for PlayStation VR. Can Sony communicate the advantages of a technology that must be used to fully understand it? Can it convince developers to make enough great games and experiences for PlayStation VR to lure consumers who are wary of another high-priced peripheral platform? And will being tied to a fixed amount of hardware power hamper the platform as the Rift and Vive eagerly adapt to whatever new power chipset manufacturers can throw at VR? It will be

a while before virtual reality sees widespread adoption, and Sony has previously abandoned technology when it doesn't see immediate returns.

Sony does have a number of advantages in its court, however. The fact that it's the most plug-and-play option gives it a huge boost when compared to the more complicated set-ups of the Oculus and HTC headsets. After playing games using all three of the major headsets, I would also argue that the PlayStation VR headset is the most comfortable to wear, as well as the most accommodating for people who wear glasses.

Perhaps the biggest advantage that Sony has in this race is in its history with gaming. Not only does it have a wide array of first-party and exclusive developers to pull from with future VR development, but Sony has developed several powerful relationships with some of gaming's biggest publishers thanks to the strength of the PlayStation brand. If Sony can

capitalize on those relationships, it's possible that PlayStation VR's library of games – both exclusive and not – could be solid. Of course, Valve also has strong relationships with many of those same publishers and more thanks to Steam, which could help bolster the Vive's lineup, and Oculus has already given us a list of exclusive titles from big-name developers.

It remains to be seen how PlayStation VR will compete with the likes of Oculus Rift and the HTC Vive, its connection to a successful console could be a great start for Sony's new venture. Sony is focusing heavily on its virtual-reality headset, and by dipping its toes into an untapped market, it could have a major advantage over other consoles who are hesitant at this early stage. If virtual reality does take off to become one of the defining trends of this generation, Sony could have a leg up on Microsoft and Nintendo if or when they decide to follow suit. ♦



THE
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THE VIRTUAL REALITY FAQ /

Explore the science behind how head-mounted displays trick our stubborn brains, simulation sickness, and potential medical concerns

by Michael Futter

Virtual reality is all about selling the illusion that we're being transported somewhere entirely new. The challenge is getting users to suspend their disbelief in an immersive format, which presents hurdles not present in two-dimensional media. We accept that representations on a television screen aren't exact or even remotely accurate, but when we're standing in the middle of a computer-generated landscape, our real-world experiences come into conflict with simulated sensations.

Oculus, Valve, and Sony have learned through experimentation and refinement that certain elements must be in place for believable, comfortable virtual reality. We break down how this technology works in easy-to-understand ways. Field of view must be wide enough, refresh rate must be fast enough, and latency must be negligible as to not create perceptible lag between movement and display changes.

HOW EXACTLY DO THESE HEADSETS WORK?

Ever wonder how a VR headset

is capable of transporting us to a virtual time and place? To get that world in front of your eyes, a lot of advanced science needs to happen behind the scenes. First off, a substantial amount of computing power is leveraged to render images twice, once for each eye. Right now, that power is provided by a PC or console via an extremely dense data cable that sends information to the head-mounted display.

Then gyroscopic sensors, accelerometers, and magnetometers work in concert with trackers hidden under LED-permeable plastic (or exposed light bars in the case of PlayStation VR) to determine where you are in real space. That data is then used to rapidly change your view of the simulated worlds with a goal of imperceptible lag and close to perfect one-to-one translation.

The onboard sensors aren't quite enough to render perfect positional information. That's where an external camera and the LED sensors or light bar come in to play. As lag is

removed and positional data approaches one-to-one correlation, our brains are fooled into thinking that our movement in the real world and images we're presented are actually in front and around us.

HOW COMFORTABLE ARE THESE HEADSETS?

Part of the reason it's taken so long for Oculus to come to market is the company's pursuit of comfort. Improving the refresh rate to 90Hz (meaning the image is replaced on the display 90 times per second), reducing latency, and minimizing persistence are all factors in allowing users to enjoy virtual reality for extended sessions. The head-mounted displays also include a number of ways to adjust the unit, including straps to modify fit to the user's head and focus dials to make the image as clear as possible in pursuit of the "sweet spot" at which the image becomes almost indistinguishable from looking at the real world.

"We weren't going to come out and say we'd solved motion

sickness or anything like that," says Oculus CEO Brendan Iribe. "This is going to be an ongoing challenge in general. As we try to replace all the light coming in your eyes and give you computer-generated eyes in a way that feels natural and completely normal like in the real world but now in this virtual world, we're in the early days. It will continue to get better. I really feel like where we are with Rift has crossed the threshold so the majority of the audience for some amount of time will be able to enjoy VR comfortably. Most people – the majority of the audience – will be able to jump in."

CAN I USE THESE HEAD-MOUNTED DISPLAYS WITH MY GLASSES?

All three of the major head-mounted displays releasing next year are compatible with eyeglasses. Each is designed to fit over some eyewear, and in many cases, you'll be able to achieve similar fidelity to those with uncorrected vision or contact lenses.

Some people with larger frames may run into problems.

Those who wear glasses on the Game Informer staff were encouraged to place their glasses in the HMD and then put both on at the same time. We expect that as the technology improves, further accommodations will be made for those that wear eyeglasses.

I HEAR PEOPLE CAN GET SICK USING VR HEADSETS

They can, but the developers are focused on eliminating this problem as much as possible. Our brains are difficult to fool, and if we aren't convinced of the illusion, there is significant potential for simulation sickness. Symptoms include cold sweats, dizziness, light-headedness, headache, pallor, nausea, and in the worst cases, vomiting.

The most comfortable virtual reality experiences map camera controls to head movement. The reason this works so well in countering illness is how our vestibular system works. Our inner ears contain fine hairs called cilia, which have microscopic crystals on the end. As we move our heads, the hairs bend and shift, transmitting signals and letting our brains compensate for positional adjustments. Simulation sickness occurs when the data your eyes send to your brain is in conflict with the information received from the vestibular system.

One of the ways the platform holders plan to combat simulation sickness is by informing the users which experiences are rougher on the stomach. The Oculus Store in particular plans to introduce a "comfort" rating. "For the stuff that's in the Store, it is curated to be a certain quality level," says Oculus head of worldwide studios Jason Rubin. "It is going to be looked at to make sure that it is above a certain amount of comfort. We'll most likely have a way of telegraphing to the customer what's more comfortable, what's less comfortable."

IS VIRTUAL REALITY SAFE FOR THE FAINT OF HEART?

One of the lingering concerns about virtual reality content is that the violent and terrifying content to which we've become accustomed on two-dimensional displays won't play the same

way in an immersive context. Speaking at Unite 2014, Cloud-head Games' Denny Unger warned developers about abusing the immersive nature of the medium. "When the commercial version comes out, somebody is going to scare somebody to death – somebody with a heart condition or something like that," he said. "It is going to happen. Absolutely." Platform holders are already working with developers to create a set of best practices for content.

IS IT DANGEROUS BEING CUT OFF FROM THE ROOM AROUND YOU?

Comfort isn't the only challenge facing VR. The head-mounted displays can be an isolating experience, especially as users begin to replace the built-in earphones with noise-isolating or noise-canceling options. Right now, there aren't good options for leaving a headset on and interacting with the world around you, whether that be answering your phone, talking to someone in the room, or taking a drink of water.

One option is outward-looking cameras installed on the front of HMDs that can display the user's surroundings at the touch of a button. They aren't the best solution according to Iribe. "Things like passthrough cameras are uncomfortable," Iribe says. "It puts the view in the wrong place relative to your eyes. It's not a good solution. It's not a comfortable solution to that idea of isolation to quickly see what's in the room. Pushing the button and looking out is not a silver bullet. There is no silver bullet for this. The longer-term way that you want to do it is by truly mapping the environment that you're in and being able to push a button and see the mapped version in the exact right place."

For now, users will be presented with a range of safety and health warnings. Oculus says it will be suggesting limits on play time and remain in a dialogue with users to help refine communication about safety issues. Part of that is preparing technical support for launch that tackles a wide range of questions that might come up from users experiencing virtual reality for the first time. ♦

VR GLOSSARY /

Every emerging technology comes with its own new terminology. Here are the key terms you should know in regards to virtual reality.

FIELD OF VIEW – The extent of the observable space that is seen at any moment. Human binocular vision is about 114 degrees, with another 60 to 70 degrees of monocular peripheral vision. The leading VR headsets all boast fields of view of 100 degrees or greater.

HAPTICS – Haptics is tech that recreates the sense of touch. In virtual reality, the vibration motors embedded in input devices are even more important for immersion, selling the illusion that you've picked up a physical object and not just a picture of one in the environment.

HEAD-MOUNTED DISPLAY – You'll likely call them Rift, PlayStation VR, and Vive, but those are brand names. Each of these highly technical and complex apparatuses have a boring generic name: head-mounted display. We expect people will find a colloquialism that has a bit more panache.

HEAD TRACKING – With the use of external cameras, head-mounted displays track users' heads to determine changing elevation, moving from side-to-side, and stepping forward and back. This tech isn't present on portable virtual reality displays, like the Gear VR.

LATENCY – Latency refers to the time delay between a stimulation and response. In order for our brains to allow us to believe we're present in a simulation, it's crucial the perspective moves in sync with our natural head turning.

PERSISTENCE – Just a few years ago, if you were to put on an Oculus Rift developer kit, turning your head would result in the image smearing. This "screen door" effect was created by images lingering too long on the screen. Over the years, Oculus and others working on consumer virtual reality have reduced image persistence to minimize the lingering after effects.

PRESENCE – If not for this being an alphabetical list, presence would be at the top. This is a word you're likely to hear bandied about whenever virtual reality is discussed, because it deals directly with the illusion that you've been transported somewhere else. Also called "immersion," this is the core principal behind good VR. The deeper the connection to the simulated world being displayed, the more you'll believe you're actually somewhere else.

SIMULATION SICKNESS – VR users often mistake nausea, headache, cold sweats, and dizziness for motion sickness. However, what is actually happening is simulation sickness caused by the perception of motion while remaining stationary. The two effects are related and can both be explained by incongruence between your senses. Your eyes sense movement, but your inner ear continues to remind your brain that you haven't moved. This conflict results in the aforementioned symptoms and, if you're unlucky, an intimate visit with a trash can.



THE
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LET ME PLAY AMONG THE STARS /

*Adr1ft is the closest most will ever come
to floating through space*

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No matter how badly you'd like to go to space, the unsympathetic odds suggest it isn't going to happen. Space travel is prohibitively expensive, whether you're trying to become an astronaut or take a commercial trip. Thankfully, Three One Zero aims to simulate the zero-gravity sensations of space using VR, providing a taste of the experience. I spent an uninterrupted hour floating through the debris of the derelict *Northstar IV* space station and walked away hopeful (and a little woozy) about the potential of VR placing us in fascinating, impossible situations.

by Tim Turi

Platform:

Rift, Vive, PlayStation VR

Developer:

Three One Zero



Speaking of hope, creator Adam Orth says *Adrift* is about the opportunity to make the best of a terrible situation. Unlike other hopeless sci-fi stories, like *Alien* or *Event Horizon*, *Adrift* focuses on the fragile chance *Northstar IV* commander Alex Oshima has for survival. Orth says he's poured much of himself into *Adrift*'s story, pulling from his very public online fallout after mocking those who took issue with the possibility of consoles requiring dedicated internet connections to function. Following his exit from Microsoft, Orth partnered with a handful of developer friends from his days making entries in the FPS series Medal of Honor at EA. The team at Three One Zero calls on their FPS roots to craft an immersive space-walk experience that leaves the guns on Earth.

"When all the Twitter stuff happened to me I thought about how I want to make a really personal game, and the only way to do that is to put yourself out there," Orth says. "So the destroyed space station is a metaphor for my life at the time. I think very obviously. Being adrift, being alone. That's how I felt. A lot of the narrative, a lot of the stories from the game, those are right from my life."

Oculus has selected *Adrift* as one of its flagship launch games, so no expense is spared for my demo. I strap on the most recent Crescent Bay prototype headset,

which is a surprisingly light and comfortable model similar to what consumers can purchase in 2016. My session begins with a tutorial teaching me how to move in zero-gravity. Soccer balls, empty storage containers, and shiny hard drives float around the spherical room. If you've seen *Gravity*, you have a good idea of how the spacesuit's propulsion thrusters control movement. The left analog stick controls forward velocity, the triggers manage ascent/descent, the right bumpers allow you to roll left or right, and pressing both triggers simultaneously brings you to a full stop. The button layout may sound complicated, but the setup is so intuitive that I felt comfortable after about five minutes of swatting a ball around.

The preview begins in earnest as Alex regains consciousness after a catastrophic incident. Alarms buzz as I move my head around to appraise my surroundings. Alex's panicked breath fills my ears as I examine what remains of the *Northstar IV*; the central hub of the space station is mostly intact, but the surrounding structures float around the perimeter like shattered bones. The game takes control of Alex long enough for her to jet inside the remains of a nearby corridor. These guided moments are a little jarring to the senses, but I'm soon free floating and in complete control.

The sensation of drifting around the *Northstar IV* is uncanny. Despite having my feet planted on the ground while seated, my mind is tricked into a weightless feeling. The explosion damaged Alex's spacesuit, forcing me to frequently collect oxygen canisters scattered around the station. The immersive effect of the Rift makes every desperate, close-call attempt to collect more air feel more urgent and tense. Alex stretches out her arm as she nears each oxygen canister, and sometimes her aching fingers feel like phantom extensions of my body. It's an eerily convincing, thrilling feeling, but I also experience some undesirable side effects from *Adr1ft*'s zero-gravity simulation (see sidebar).

"At E3, Richard Garriott came by and played our game, both traditionally and in VR," Orth says, beaming about the creator of *Ultima* and visitor of the International Space Station. "I'll never forget it. He took off the headset and he says, 'Nailed it.' I mean, this guy has been in space. It was a pretty cool moment."

After you adjust to the surreal, quasi-meditative feeling of spacewalking, you navigate the

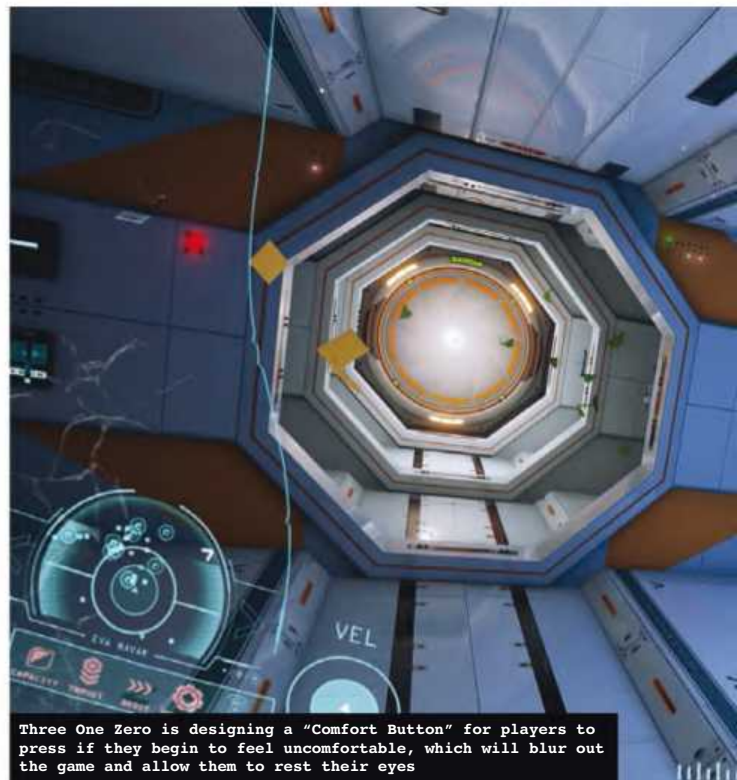
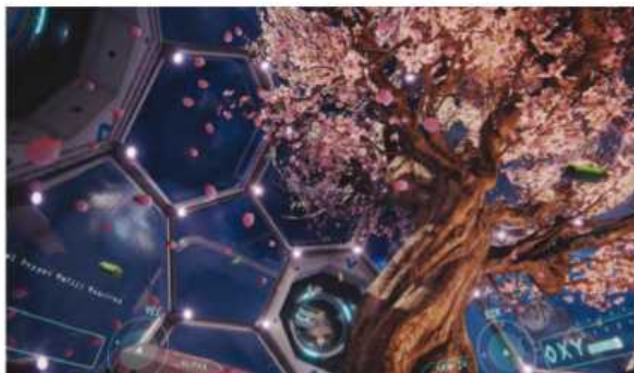
shattered *Northstar IV* while hunting down components to restore power to the mainframe with hopes of finding a way to contact Earth and get home. Players can collect audio tapes and read emails on undamaged computer terminals to learn more about the lives of these

astronauts before the enigmatic disaster struck. For example, Alex learns more about her teammate McDonough, and his regret for not going to more of his daughter's piano recitals. Later, I experience a haunting sequence where I float towards a motionless spacesuit drifting

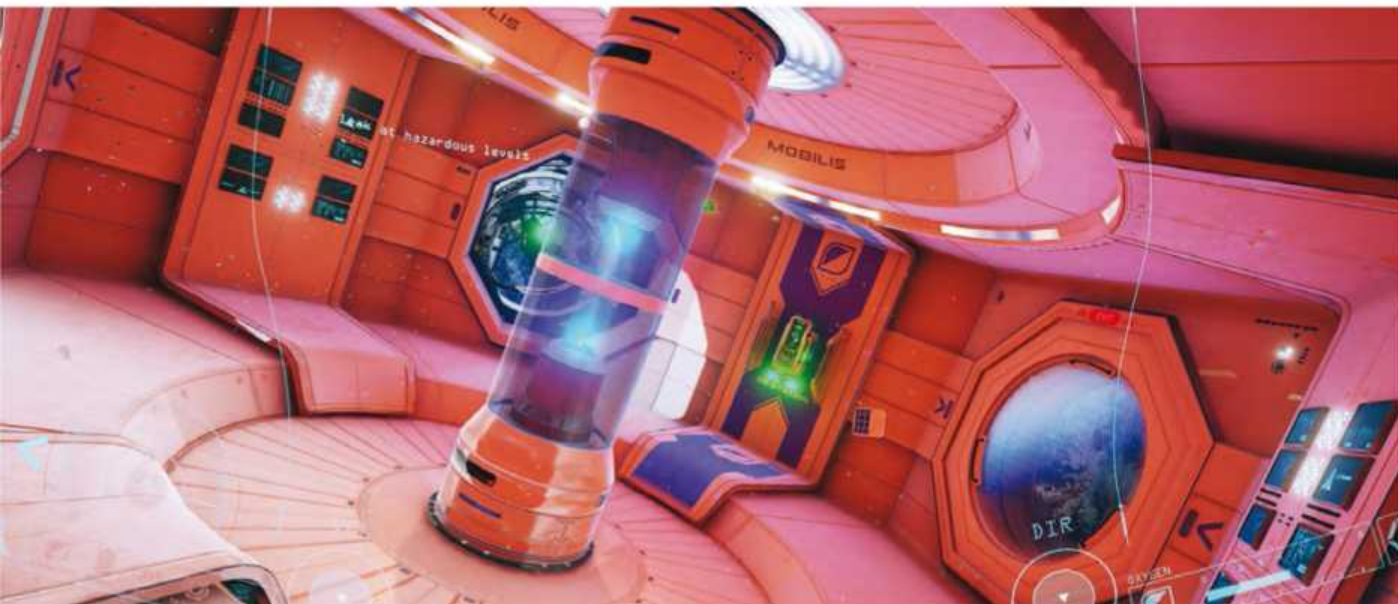
among the debris as beautiful piano music plays. I collect nametags from the floating corpse that read "McDonough." The story of a workaholic man's desire to spend more time with his family reminds me of Orth's semi-biographical approach to writing *Adr1ft*. Given Orth's former



In addition to Oculus Rift on PC, non-VR versions of *Adr1ft* will eventually release for PS4 and Xbox One



Three One Zero is designing a "Comfort Button" for players to press if they begin to feel uncomfortable, which will blur out the game and allow them to rest their eyes



employment at EA – a company infamous for intense employee time commitments in the past – it’s easy to imagine some of McDonough’s tragic plight in him.

Before long my hour with Adrift is up. I experience an odd mix of relief and longing as I surrender the Rift headset to Orth. Drifting

through the wreckage of the *Northstar IV* is unlike any gaming experience I’ve ever had, both in terms of its stellar, melancholy beauty and temporary physical unease it brought me. But like a child’s first time on a thrilling amusement park ride, I’m excited to rally and jump back in. ♦



BATTLING VR SICKNESS

Three One Zero’s ambition to approximate zero-gravity spacewalks faces a paradoxical quagmire. The goal of Adrift is to make players feel like they’re exploring a space station while experiencing complete weightlessness, but Three One Zero also strives to avoid making players feel uncomfortable. Despite quickly feeling like a skilled astronaut during my demo and having few issues with other VR demos, I endured a gradual arc of simulation sickness.

For context, I’ve never experienced simulation sickness while playing video games but previously dealt with cold sweats and a lurching stomach during air travel and long car rides. Those same unpleasant feelings slowly built up during my hour-long session with Adrift, eventually plateauing around the 40-minute mark before gradually dissipating. I never felt close to barfing, but my back was damp and my stomach was mildly upset for a while afterwards.

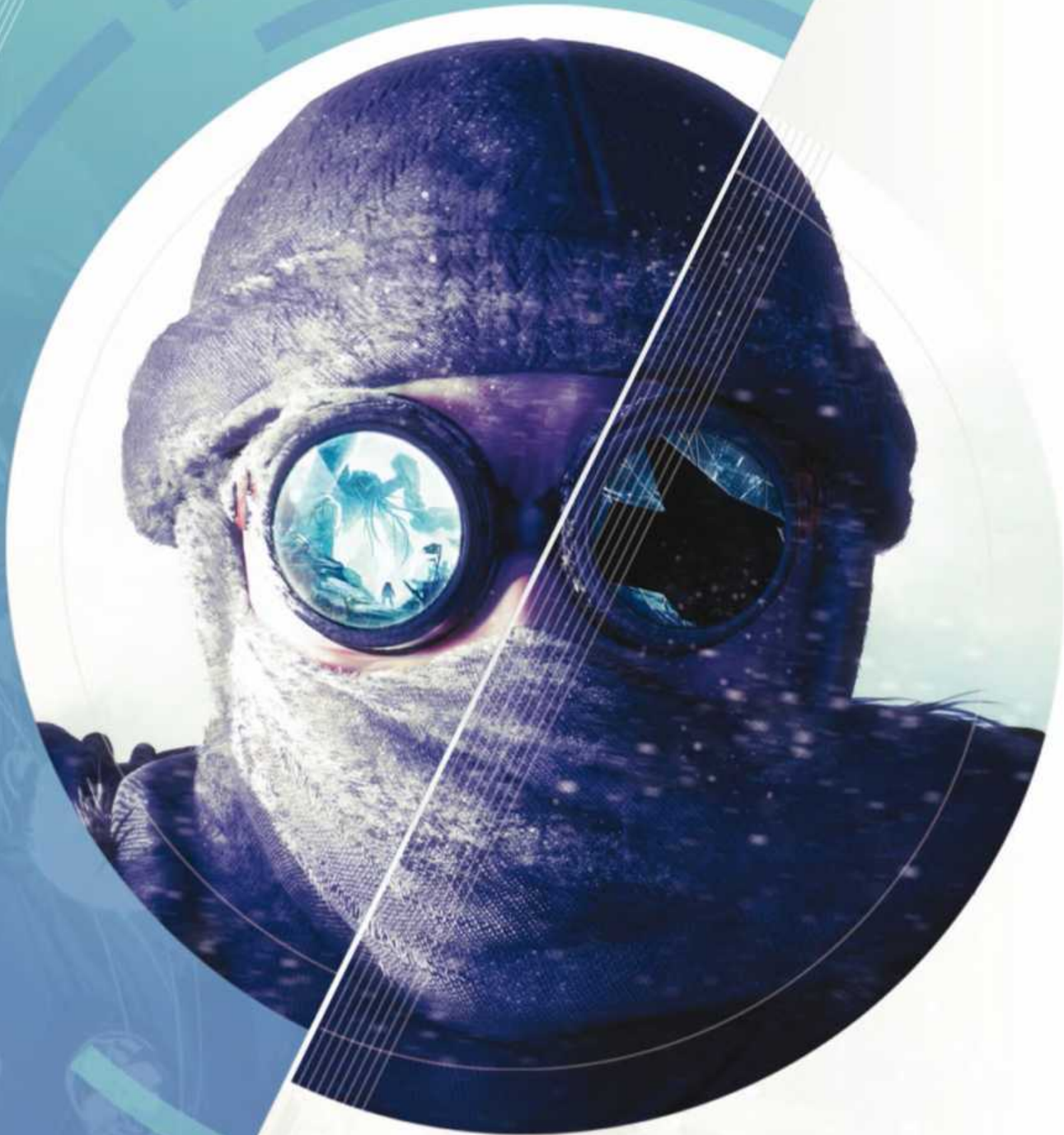
“Maybe [that’s] a net-positive for the game,” says Three One Zero’s Adam Orth regarding Adrift’s level of fidelity. “We take a lot of care to sticking to the fiction of floating around and everything. We’re still tuning and tweaking that. We don’t want anyone to feel uncomfortable ever, playing our game. But it’s unrealistic to think we’re going to perfect it. It’s impossible. There are people that are going to be more susceptible to it no matter what. Maybe VR isn’t for those people.”

According to NASA experts, about 50 percent of people experiencing zero gravity for the first time will suffer some degree of space sickness. Thankfully, being careful about what you eat beforehand, taking certain medications, and repeated exposure to zero-gravity are potential real-life remedies for decreasing negative effects.

Orth says of the thousands of brief demos he’s given, few have complained about these side effects. However, my VR sickness kicked in after the 10-minute mark, which means it’s not a one-to-one comparison. The fact that I eventually acclimated to the simulated weightlessness near the end of the demo makes me hopeful that VR users will eventually grow accustomed to these unfamiliar sensations.



THE
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MADNESS, FROM A DIFFERENT PERSPECTIVE /

*Edge of Nowhere, Insomniac's homage to
Lovecraftian horror, has an unusual VR vantage point*

V

Victor Howard leaps across a glacial chasm, gouging his ice axe into a wall an instant before he would have slipped into the abyss. The explorer has only been in Antarctica a short while, but the signs that this rescue mission will end in tragedy are piling up, along with the frozen bodies of Captain Simon Edwards' crew. The crumbling ice and gruesome evidence that Edwards encountered something horrible are disconcerting enough. Heaving his body over the ledge raises the question: Would Howard be able to keep it together if he knew that his every action was being monitored by an observer, who loomed over every moment unseen?

by Jeff Cork

Platform:
Rift

Developer:
Insomniac Durham

With upcoming horror game *Edge of Nowhere*, *Insomniac* is taking on a project seemingly designed to make people squeamish. First, there's the genre, horror. For every die-hard fan I talk to, there are plenty more that say scary games are, well, too scary. Then there's the fact that it's developed for virtual reality, an experience that can make some people physically ill. Even though the format prevents players from chickening out and exploring the nightmarish world in daylight with the blinds drawn, the developers say they're taking great pains to make sure getting stalked by unnatural creatures is as comfortable as possible. It's a word I wasn't expecting to hear considering the subject matter, but comfort is one of *Insomniac's* mantras.

Edge of Nowhere is planned to release around the launch of *Oculus Rift*, and it could be one of the first VR titles that audiences play. Because of that, the team is being particularly sensitive to ensure that players will remember the game as a tense, fun experience, and not as a carpet stain where they lost their lunch.

"When we were first approached by [Oculus head of worldwide studios] Jason Rubin, we had all these crazy, fun, fantasy ideas that we wanted to do," says creative director Brian Allgeier. "But he kept saying that we needed to make sure that people were comfortable, and that we focused on mechanics and a camera that doesn't cause nausea."

The solution was a third-person perspective, where the gameplay ultimately heads in one direction. This approach gives players a detached view of the action, while still taking advantage of the head-tracking. The camera isn't locked behind Victor as it typically is in third-person action games; players can move their head independently around to examine the environment. As players maneuver Victor through ice caves, plains, and alien structures, the camera's "tripod" might follow or flank beside him, but it's up to the player

to catch a vertiginous glimpse down a chasm or a skittering monstrosity that scurries out of view the instant it's seen.

A DOOMED EXPEDITION

It wasn't supposed to be like this. In December 1932, Captain Simon Edwards and a team of biologists, researchers, seamen, and others left for Antarctica. The team was accompanied by Ava Thorne, Victor Howard's love interest. And then nothing. Weeks after the explorers failed to check in via radio, Howard charts a plane to mount his own rescue, or at least to find some answers. As it turns out, he discovers more than he was prepared to handle. Something truly weird lurks beneath the continent's wind-carved surface.

"When he lands, he feels like he's right behind some of the members, some of them who have just died and encountered these horrors," Allgeier says. "It's not like he's stumbled upon it and it's all over – they're still in the midst of it. He's getting little bursts of radio calls and finding these notes along the way, so he knows something's up, but he can't quite piece it all together."

The game starts slowly, as both Victor and players acclimate to this strange and inhospitable location. "That's one of the things I preach to our designers: Let's have a calmer, colder opening, where we're not having a lot of ups and downs and huge elevation changes," Allgeier says. "Let's just give people the thrill of visiting Antarctica. You're going back to the '30s and Antarctica – that's cool enough. We're doing some cool stuff where we're surprising you, but focus on the experiential. Our tendency as developers is to want to train the players, throw all these tutorials at you, 'Press X to jump, here's how to use your weapon wheel,' and get into it really quickly. That kind of kills the experiential aspect of it a bit. Even though we do have some layered mechanics and some strategies, we delay that until much later to let you get absorbed into the world."

The first portion of my demo shows what he means. Rather than huddle around the plane at night, waving off tentacled beasts with a flare, Victor's main opponent in the early parts of the game is Antarctica itself. Decked in a thick wool coat and pants, with a massive backpack strapped on, Victor looks like he's equipped for whatever might come his way. Initially, he's not wrong. In the beginning of the game, Victor braces himself against howling gusts, using debris from the previous expedition as a bread-crumbs trail of sorts.

Here, his obstacles include the hastily built plank bridges the expedition slapped together. Several of them fall apart underfoot, and Victor has to leap across

gaps and keep pushing ahead to avoid falling to his doom. It's a great showcase for virtual reality, with a dizzying sense of scale. I could feel something close to panic set in during one moment, where Victor scaled his way up a sheer wall. It looked like an incredibly long distance to fall, but I wasn't about to test it.

Entering an ice cave, Victor encounters the source of his future nightmares. Edge of Nowhere's Antarctica is home to creatures that are as deadly as they are unsightly. Audio was still placeholder, and the expedition journals weren't in my demo to explain why or how these monsters are here, but one thing is certain: Edwards' crew stirred up something ancient and malevolent.

UNSETTLING ROOTS

If the idea of horror and Antarctica seem familiar, there's a good reason for it. "One of the big ones was *At the Mountains of Madness*, which is about a 1930s exploration team," Allgeier says. "[H.P.] Lovecraft was inspired by Richard Byrd, who had an expedition in 1929 where he took a couple of planes and boats with him. That one went okay, but in Lovecraft's story they ended up finding this alien city and then these weird monsters that lived there. That was one of his more popular works, and we think people who are fans of that fiction are going to love this."

Inspirations are obvious, from the creature designs, which evoke a sense that they were cobbled together from pieces of a demonic menagerie, to a few encounters with a titanic beast. This creature makes the ground quiver with its massive steps, and I nearly strained my neck looking straight up to get a peek at its redwood-like legs and tentacle-covered maw.

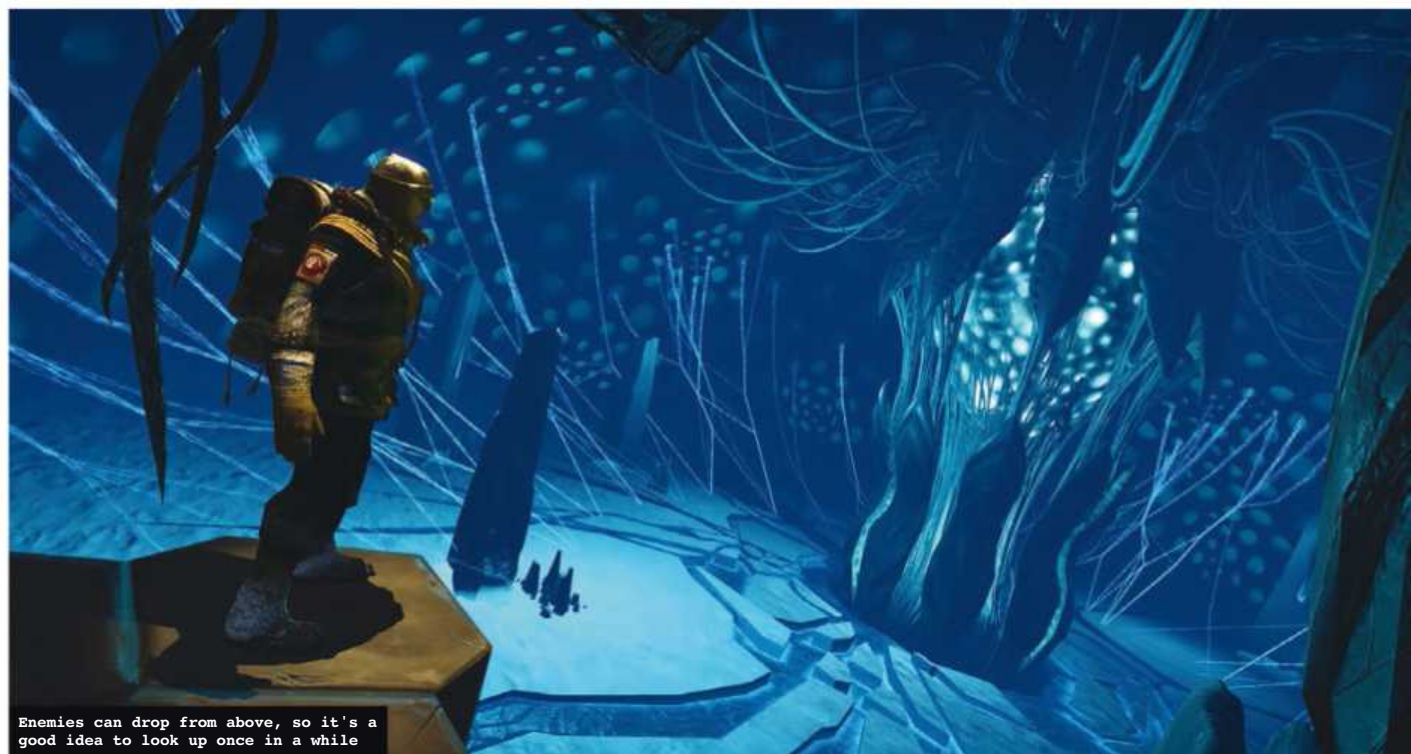
Another Lovecraft story, *The Shadow Over Innsmouth*, inspired another section of the demo, where Victor finds himself in his hometown of Providence at night.

This seaside town seems normal at first, but after discovering a lone boot accompanied by a streak of blood on the deck of a nearby ship, the respite from my earlier unease is over. Victor moves from ship to ship as he heads toward the center of town, drawn to the flickering street-lamps. Far in the distance, a lighthouse scans the horizon with an eerie greenish glow – a sentinel watching over scenes of horror.

The earlier demo highlighted navigation, and here I get to try my hand at stealth. Since you're not evading soldiers, Allgeier says it has a different feel from its contemporaries. "We're used to Metal Gear Solid, where you're the most powerful man in the room and you can see exactly where everyone's looking, where everyone's going. You have crazy heads-up displays. With this, there's a certain ambiguity. It's like you're in a room with a dog. The dog's wagging his tail and his ears are up, everything's cool. The dog has ears down, tail down, acting kind of strange, you want to avoid it. It's those kind of cues that we're playing with, and we're hoping can put people on edge, but there are enough to help you sneak by them."

MIND PLAYING TRICKS ON YOU

Victor's sanity slips during the game, but players don't need to worry about any Eternal Darkness-style meta freakouts. "We actually thought about that, but you have to be really careful about that with comfort," says creative director Brian Allgeier. "We were doing some weird distortion effects, but in the end we needed to play it safe with comfort – you can't risk that. Even though it's very tempting to play these weird games where we play with your field of vision or have flies landing on the lens. But there aren't any flies in Antarctica, and that's why we didn't do it!"



Enemies can drop from above, so it's a good idea to look up once in a while



I see what he means when I encounter what seems like a hunched-over deckhand. When I approach, he stands up to its full height, revealing a hulking monster. Its top half is built to body-builder-like proportions, while its legs are spindly. Its chest and face are writhing masses of wormy tentacles, which flicker and probe the surrounding area. Victor stays low, trying to circle behind as he advances toward the front of the ship. Unfortunately, the beast whirls around unexpectedly, and the glow on its pulsing chest changes from purple to white. I stand and run, but startle several of the creature's friends. I'm overtaken, and beaten to death by its four arms.

Eventually, I poke around, learning how far I need to stay from these monsters (as far as possible), how well they can see (better than I'd hoped), and the best path to take (in the middle, whenever possible). The experience is tricky, since you can't quickly rotate the camera around to get a sense of Victor's relative position, and backtracking is difficult. Inching past enemies is nerve-wracking, but I wasn't particularly frightened – and I count myself among those who prefer playing games like *Silent Hill* during the day. Once I got the hang of turning my head around more than I first thought would be necessary, my luck changed. After a few more gruesome deaths, Victor scales the mast and rappels down onto the dock below.

The town is in chaos, or at least the aftermath is present. The streets are empty, save for

a few more of those creatures. Blood and chunks of the residents smear the paving stones. Victor stays low, hugging the shadows and miraculously avoiding the sniffing monsters. My heart sinks at one point, as he is forced to walk into the beam of an abandoned auto's headlights. Fortunately, there's nobody around to witness this bold move. He finally sees someone at the end of the dock. Bracing myself for the worst, I'm pleasantly surprised to see that it's the missing Ava Thorne. She embraces him and she tells him that he shouldn't be there. It's here that I coincidentally notice that Victor's coat is still covered in snow. The screen flashes white, and he blocks the light with his arms. We're not supposed to be there, and he's not. He was in Antarctica this whole time. Victor is losing his mind.

"As he gets deeper into this alien labyrinth, he starts having these hallucinations and he starts going back in time through flashbacks, almost like *A Christmas Carol*, where Scrooge would see the past, the present, and the future," Allgeier says. "So he's having these glimpses himself, and you realize that he is carrying a lot of dark baggage with him and that something didn't go right in his past that he wants to resolve. By saving this expedition, it almost feels like he's saving himself. That's where it gets more psychological and the tale gets more twisted over his journey. And we start to question what really happened in his life and what is happening in Antarctica."

FIGHTING BACK

If these creatures are figments of Victor's imagination, they sure don't bleed like it. In the last part of the demo, Victor is prepared. In addition to his ice axe, he can use weapons like flares, petrol bombs, and shotgun blasts to fight these nightmares. These are largely improvised weapons, and as such, supplies are limited. Still, after cowering behind crates for so long, it feels great to fire a harpoon straight into the chest of one of these freaks.

Weapon selection uses a familiar wheel-style interface, but targeting has a VR twist. Rather than pull up ironights to target, players simply aim the reticle by moving their head around. It's incredibly accurate and intuitive; I was able to take out several creeps with a single shotgun blast. "It's so second nature and natural to shoot where you're looking," Allgeier says. "I think people are going to look back and we're going to explain to our grandchildren or whatever that you had to use your thumb to move your head when you played the game. 'What? Why?'"

There's a definite tension at play – skirting around monsters that can kill you without thinking will do that – but my time with the game revealed an experience more unnerving than terrifying. Once again, it comes back to comfort.

"I played *P.T.* and I loved it, but it scared the hell out of me. I can't imagine that in VR," Allgeier says, laughing. "I'm nervous about actually giving people heart attacks. I was nervous in *P.T.* that I might have a heart attack. But I think there's a line to walk there, and you can go

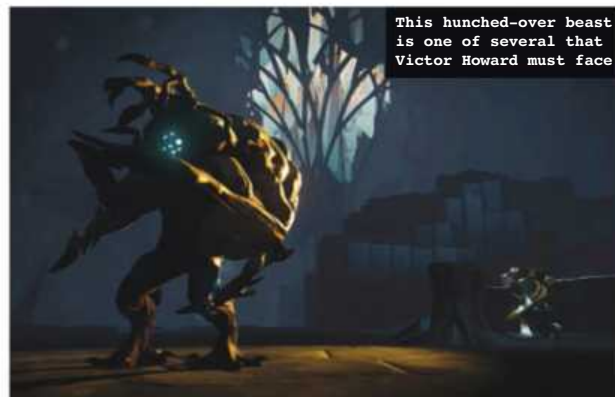
too far. We need to pay attention to that and figure it out. I think we need to be fair to the players, too, and not just try to completely terrify them. We are trying to scare them, we want the terror to feel real, but we don't want to do too many cheap jump scares."

BOTH EYES ON VR'S FUTURE

I felt a lot of things during my time with *Edge of Nowhere*, but fortunately, sick wasn't on the menu. The camera heads off potential issues at the pass, creating a strange and effective illusion that you're a participant and a slightly detached observer of the action. It's a perfect showcase of how a game can have traditional mechanics in a virtual-reality environment; not everything has to be shown from the first person, after all.

Allgeier is expectedly bullish on VR as a whole, but he understands the skepticism. He says it's reminiscent of an earlier era, before games including his own *Ratchet & Clank* showed that a then-unproven approach to game design could work.

"I was having similar feelings back in the mid '90s, when 3D games were starting to come to be," he says. "People weren't sure if it was going to take off – it's so absurd to think about now. 'Will people get into these 3D games? There's so much that we're losing from 2D games.' The 2D side-scroller, there's clear special relationships and the gameplay is really tight; 3D is really murky and we have to sacrifice so much. People were trying to make 3D side-scrollers and things like that. But in the end, we figured out a way." ♦



This hunched-over beast is one of several that Victor Howard must face



THE
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EXPLORING NEW REALITIES /

From seated experiences and movement-focused games to classic controller-based titles and gesture-oriented minigames, the early virtual reality game libraries for the PlayStation VR, Rift, and Vive are quite diverse. We explore this variety and identify some "gamer's games" over the next 17 pages



EVE: VALKYRIE

LIGHT-JUMPING INTO THE VR FRAY

Platform: PlayStation VR, Rift Developer: CCP

One of the first virtual reality projects we heard about in this most recent technology revival is still one of the most promising. An action-focused spinoff of the heady *Eve Online* MMO, *Valkyrie* places players into the cockpit of a fighter ship and blasts them into an intergalactic multiplayer shooter.

Cockpit-based games are natural candidates for virtual reality conversion because they minimize the disconnect between a player's physical and virtual bodies. In *Valkyrie*, players take the role of a downed New Eden fighter pilot who is resurrected by the infamous Jirai "Fatal" Laitanen, an old *Eve* character who runs a pirate faction known as the Guristas. Rumored to have

died long ago, he's been abducting pilots from New Eden and resurrecting them for his fleet. He kidnapped the talented pilot Ran Kavik (voiced by Katee Sackoff, who starred as Starbuck in the popular *Battlestar Galactica* reboot), and now he's kidnapped you.

Our demo starts in the cockpit as the ship starts its pre-launch systems check. Once given the green light, the ship blasts out of the bay and into space. The fighter looks tiny in comparison to the huge capital ships that comprise the rest of the fleet. While weaving between the ships, from the cockpit view I can move my head around to check my flanks and examine the detailed instruments of my fighter ship. Soon a routine escort

mission changes into a mad scramble to defend these vulnerable ships from the onslaught of an enemy fleet that warps into view and attacks.

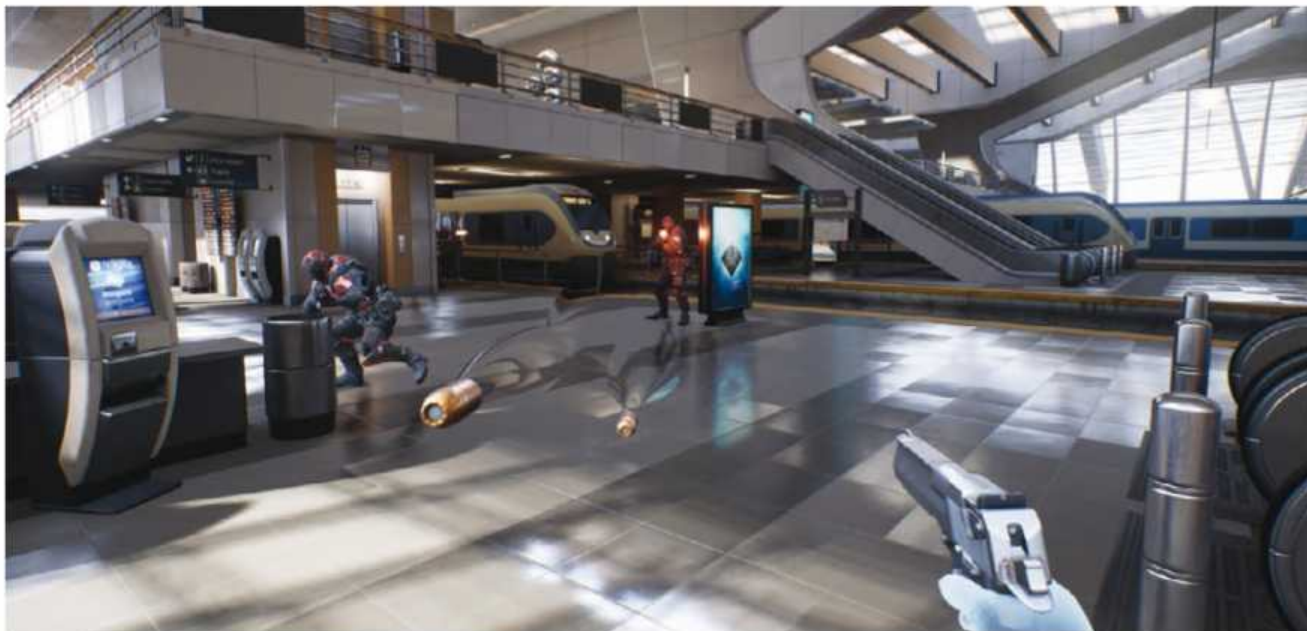
The arcade-like controls are easy to pick up with the Xbox controller, as I take down enemy fighters with my Gatling guns and missile allotment. The combat feels more in line with a *Rogue Squadron* experience than the more intricate offerings in *Elite: Dangerous* or the *Star Citizen* dogfighting alpha. My high kill count is all for naught, however, when a ship warps in to unleash a devastating, Death-Star-like beam that tears apart a capital ship. My fighter is caught in the destruction as well; as my windows shatter and oxygen rushes out of my ship

I hear Sackoff say, "See you in the next life."

CCP aims to deliver depth of play via its progression system. As you rack up kills in this multiplayer game, you earn currency you can spend to access different ships and plenty of customization options for making the type of fighter craft that best fits your play style. Want to put Gatling guns on a more agile ship build or decrease the amount of armor on the wings of your heavy class ship for the sake of gaining more speed?

Valkyrie is one of the only games currently slated for both Rift and PlayStation VR. You can look to jump into the cockpit of this sci-fi space-combat game right around the launch of the respective platforms. —MATT BERTZ





BULLET TRAIN

THE MOST CONVINCING ARGUMENT FOR VIRTUAL FPS

Platform: Rift Developer: Epic Games

I've tried several VR demos across multiple units, but no single demo or game has so fully sold me on the potential of virtual reality like Bullet Train. The brief demo uses both the Oculus Rift and its Touch controllers to make a convincing argument for immersive first-person shooting in VR. Between the beautiful Unreal Engine 4 tech, the intuitive combat design, and a clever approach to movement, I finished my 10-minute play session intrigued by the potential for a much longer and more involved full game – if Epic ever makes it.

Bullet Train opens on a city subway, and takes a few minutes to

familiarize the player with its controls. Transparent blue hands are visible when you look down while wearing the headset, and they show your hands as they move in real time, thanks to the motion-tracking capabilities of the Touch controller. Pulling the grip button (beneath your middle, ring, and little fingers) grabs hold of weapons and other objects in the environment, or releases them. Like you'd expect, the trigger button beneath your index finger shoots a gun. I can grab pistols, shotguns, or grenades, and even dual-wield. Moreover, the sense of moving my hands in real time is nearly instantaneous. The two

cameras' ability to triangulate and sense not just vertical and horizontal movement, but also detect depth, is impressive. Unlike many other motion-sensitive controllers I've used, like the Wii Remote or the Move Controller, I rarely felt as if the Touch misinterpreted my motion intent.

One of the thumb buttons allows you to aim at preset locations in the environment and teleport to that spot, and time slows down as you aim so you can get oriented. The location blinking adds a novel twist to the standard shooting-gallery dynamic, which normally has you standing still while enemies charge your location.

When the train doors open, a selection of masked bad guys are there to greet you, and it's time to put your shooting to the test. The feel of extending your arm in real life and seeing it do the same in the virtual world is seamless and thrilling. You genuinely feel like you're aiming down your gun's sights as you fire at the cavalcade of charging enemies. The arcade sensibilities of the demo have you flinging down old weapons and picking up new ones in a flash, like you're the star of a high-octane John Woo action scene.

As I play, bullets and missiles heading my way sometimes slow down like something out of *The Matrix*. If my hand is empty, I can pluck them out of the air and fling them back.

Bullet Train captures that hard-to-define sense of immersion VR developers call presence, albeit in a fantastical and cinematic style that in no way feels realistic. That sense of being truly enmeshed in an unreal experience is the biggest thing that makes VR exciting; I hope Bullet Train is only the beginning of Epic's explorations with the technology.

– MATT MILLER





I EXPECT YOU TO DIE SURVIVAL VIA EXPERIMENTATION

Platform: Rift Developer: Schell Games

The scene fades in as a voice tells me that the evil Dr. Zor has trapped me in a car parked in the belly of an airplane flying at cruising altitude. I look around, taking in the fine Corinthian leather, polished faux wood-grain features, and the poison gas billowing out around the vehicle. I've got five minutes to escape, and the voice explaining my predicament predictably tells me, "I expect you to die." That also happens to be the name of this clever and amusing virtual reality demo.

I Expect You to Die is Schell Games' take on the wildly popular "room escape" genre. In this scenario, escape means turning the car on, driving it off the plane, and activating the parachute. But

chances are you won't need to concern yourself with a free fall on your first try. Escaping requires exploration of the limited environment, clever combinations of mundane objects, and (most likely) learning from failure.

While you can play I Expect You to Die right now with a mouse (if you have a Rift developer kit), the experience is perfectly suited to Oculus' upcoming Touch controllers given the amount of objects you can interact with in the stylish car. Some of them, like the revolver on the back seat, are obvious. Other items, like the champagne bottle in the center storage console, are less intuitive.

While I won't tell you which items are key to the solution, I was impressed with the scenario's

versatility. For instance, I discovered a cigar and was able to light it with a deadly laser. This isn't something you need to do, but I'd recommend that if you decide to light up that you not toss the lit cigar onto the cardboard instructions. Oops.

Schell Games has designed a series of tasks that, while all connected, require puzzle solving skills, creativity, and a good sense of humor. I delighted as much in my failures as I did in my eventual success.

I Expect You to Die reminds me of Fireproof Games' The Room series. It makes smart use of the technology, works to train users gradually on interacting with its particular ruleset, and ultimately provides an engaging challenge.

Right now, I Expect You to Die is a standalone experience for Oculus Rift. You won't need to wait for the Touch controllers to try it out when the consumer head-mounted display launches early next year, though. However, if you get on board with an Oculus Rift headset, I urge you to replay the game with Touch.

All signs point to I Expect You to Die being a more fully fleshed-out experience at some point. Other scenarios mentioned on the Schell Games website include the player being suspended over a shark tank or tied up next to a ticking bomb. I look forward to exploring more of Schell Games' homage to the best (and most absurd) designs of James Bond's foes. —MICHAEL FUTTER





LAND'S END

USING YOUR MIND TO RESTORE AN ANCIENT CIVILIZATION

Platform: Gear VR Developer: Ustwo

Ustwo made a name for itself in 2014 when it debuted the crafty puzzle game Monument Valley. Its beautifully simplistic art style went on to win our best mobile exclusive award and capture a slew of other accolades that year, including two BAFTAs for best British game and best mobile/handheld game. While Ustwo isn't abandoning puzzles, this time around it's changing its venue and exploring virtual reality. Land's End tasks you with awakening an ancient civilization with the power of your mind. I played an extended demo of this first-person game, and it has a clever use of VR with the creative puzzle-solving that made Monument Valley shine.

Land's End takes you to a deserted and lonely land, but it's far from dark and uninviting; the pastel locale is beautiful with its high vantage points, scattered islands, and glistening ocean. The overall calmness and pleasant sights make you want to explore and see what else is around. It has this quiet, almost too quiet feeling like you're about to unlock a big secret. You travel simply by focusing on white indicators in the environment, using either a controller (Bluetooth devices are compatible) or by simply staring for a few seconds at the indicator. This is where your mind powers come in handy, since small puzzles often surface on the island.

The Gear VR has head-tracking,

so simply focusing on an object allows you to lock onto it, and turning your head allows you to place it where you want it. Some puzzles are solved by merely moving your head in different directions to connect lines, while others require you to move objects to match symbols. In one instance, I want to enter a cave, so I need to levitate a stone monument to block a waterfall from preventing my way in. Puzzles start out simple, but get more complex as you delve deeper.

The head-tracking works well, and has you looking around constantly. It makes you feel right in the locale as an explorer trying to find every hidden nook and cranny. My experience was serene

and relaxing, and I enjoyed the "go with the flow" feel of the game. Only my own curiosity was pushing me, and it was a nice change of pace to be in such a tranquil place. Land's End is also slow paced, which should make it a non-threatening option for those prone to simulation sickness.

Ustwo found an interesting way to tell a story with Monument Valley, and it's doing the same thing with Lands End. Something keeps telling me this land has so much more to it than I've uncovered. Even without the intrigue, I enjoyed just being somewhere I could relax and be taken away from the world for a while. Talk about a way to unwind.

—KIMBERLEY WALLACE





HEROBOUND: SPIRIT CHAMPION

A GOBLIN QUEST FOR VR ADVENTURERS

Platform: Gear VR, Rift Developer: Gunfire Games

Plenty of games have drawn inspiration from Link's continued adventures in The Legend of Zelda series, but VR has the power to make even the most familiar experiences feel new again. Herobound: Spirit Champion might not exhibit the most surprising or revolutionary uses of VR, but early adopters can expect a solid adventure.

Herobound: Spirit Champion puts players in the role of an unnamed goblin hero tasked with saving the world from a vengeful fire spirit. The angry spirit has invaded the other three realms of the kingdom (water, air, and earth), capturing and imprisoning their ethereal guardians. Your hero's village conveniently lies in the center of the four realms, serving as a hub world. Each realm contains a dungeon themed after its corresponding element, complete with multiple minibosses and a final boss.

Shades of Zelda reach far beyond Herobound's cute and cartoony aesthetic. Rupee-like colored gems serve as your currency, and you gain new heart containers from defeated bosses. You also acquire various new items and weapons, which are incorporated into dungeon puzzles in myriad ways. Early

puzzles include shuffling blocks onto pressure plates and shooting arrows at glowing switches to raise and lower platforms, but evolve from there. Combat also starts out simple – expect to slash your way through plenty of blobs and skeletons – but you can unlock a variety of new attacks as you progress.

Herobound's virtual reality features are relatively conservative; you look down on each area from a fixed location, which provides a wide-open isometric view of the action. You still rotate

your head to see the full environment, but the zoomed-out view leaves you feeling more detached from your surroundings compared to other VR experiences. That said, the technology is periodically incorporated in interesting ways. For instance, equipping the bow brings up a fixed reticle, which you aim by simply moving your head, so homing in on enemies feels fast and intuitive. A handy icon of your goblin's head pops up on your periphery when you wander off-screen (or simply look in

a different direction), making it easy to keep track of where your character is at all times.

A lot of VR titles feel more like experiments than full-fledged games right now, but Herobound is an early exception. It may not be the most original adventure or feature the most innovative use of VR, but I was charmed by the experience. Herobound: Spirit Champion is a solid and entertaining introduction to the world of virtual reality, which you can play for free right now.

—JEFF MARCHIAFAVA





LUCKY'S TALE

RETRO-INSPIRED WITH A TWIST

Platform: Rift Developer: Playful Corp.

Sliding a virtual reality kit onto your head can be like peering into the future depending on which game you're playing. In the case of *Lucky's Tale*, it's a combination of cutting-edge technology and a beloved genre that has been MIA from regular rotation for over a decade. Developer Playful Corp. rewinds the genre to tried-and-true fundamentals last seen in series like *Ratchet & Clank* while letting players get up close and personal with a colorful, charming little world.

Lucky is an adorable orange fox that immediately brings to mind Sonic's friend Tails, minus the extra appendage. My time begins with the titular fox smiling up at me. Given the intimacy of the VR experience, this creates an initially jarring, then ultimately endearing feeling that you're some massive deity safeguarding Lucky. Your head movements control the view, which

is a novel mechanic that takes a little getting used to. I wonder how players' necks might feel when playing more than 10 minutes at a time.

The action in *Lucky's Tale* is platforming 101, but it controls so well and looks so sharp that I can't find anything to complain about. Lucky has a helpful double jump that allows him to quickly clamber up cliffs and line up jumping attacks to pounce off enemies like smiling caterpillars. Golden coins are scattered around the world, which stand out from the environment similar to *Super Mario 3D Land* on the 3DS. Stacks of breakable boxes are also tucked into corners of the world begging to be bashed into bits, sometimes bringing to mind *Ratchet & Clank's* simplistic-yet-satisfying action. I don't bring up these comparisons to make *Lucky's Tale* seem derivative, but to demonstrate that Playful Corp. is delivering a platformer that

controls remarkably well.

Dodging flame-spewing totems and leaping across chasms using a 360 controller feels responsive and natural, and I wonder how much of that is thanks to the VR sensation of being so zoomed in on the action. The cartoony game world occupies your entire peripheral vision, which reminds me of days from my childhood with my face pressed close to the TV

while trying to nail tricky jumps in *Super Mario 64*.

Lucky's Tale doesn't offer much in the way of new platforming mechanics for longtime fans, but the VR experience does much to enhance the adventure the rest of the way. I had trouble wiping the smile from my face after being so immersed in such a charming world, and look forward to returning. —TIM TURI





VR SPORTS CHALLENGE

MIND THE NET

***** Platform: Rift Developer: Sanzaru Games *****

What's a platform launch without a sports game? From Wii Sports to the early editions of Madden, every console seems have one in its repertoire. The Oculus Rift is no different thanks to VR Sports Challenge, a collection of football, baseball, basketball, and hockey minigames.

The hockey demo I recently played puts you behind the mask of a goalie and challenges you with keeping pucks out of the net during a penalty kill. As the demo starts, my character is coming to after colliding with an opponent. The captain skates over to give me the layman's concussion test, making me track his finger to ensure I can focus. As he heads over to the circle for a face-off, I survey my surroundings. Thousands of fans are watching the action from the stands, and the scoreboard hovering above informs me I need to keep at least three pucks out of the net to preserve the win.

Once the puck drops, the players pass around the boards looking for a shot, forcing me to track it through traffic. Once the shot is unleashed, it's up to me to make the save. The controls are simple; while focusing on the puck, the left bumper makes saves to my left, and the right bumper makes saves to my right. Timing is everything; react late and you may give up a juicy rebound that creates another quick-scoring chance. Deflect it to one of your players and you can trigger a shorthanded breakaway that switches the camera to a forward and gives you a shot attempt.

The goal of this minigame is to rack up as many points as you can by keeping the puck out of your net and capitalizing on those shorthanded opportunities. Tracking rebounds can be tough given the speed of the puck, but this simple gameplay slice makes you feel like you are really a part of the action, and the scoring system encourages replay.

VR Sports Challenge may not be deep, but its accessibility could make it an early standout on the Rift. —**MATT BERTZ**



CHRONOS

IMMERSED IN A DEADLY DUNGEON

***** Platform: Rift Developer: Gunfire Games *****

I've spent countless hours exploring danger-filled dungeons, but my brief hands-on time with Chronos proves what a huge impact a new perspective can have on an otherwise typical third-person adventure.

Rather than playing from the standard over-the-shoulder perspective, players explore Chronos' expansive labyrinth from a series of fixed camera positions, similar to classic Resident Evil. However, the ability to freely rotate your head makes you feel less like a camera and more like an eyewitness to the action. As cliché as it sounds, Chronos' implementation of VR makes you feel like you're in the game, standing just off to the side in massive torch-lit chambers and enemy-guarded corridors as you navigate through its deadly challenges.

The highlight of the demo's powerful use of perspective comes in the form of a towering giant, who I find sitting stationary in the middle of large hall. As soon I begin turning a crank to open a portcullis on the opposite wall, the giant lurches to life, slowly rising to its feet and lumbering toward my hero. The race to escape is intense, requiring me to turn my head from side-to-side to check the progress of the slowly opening gate while ensuring my gargantuan foe stays at a safe distance.

I roll under the gate without a moment to lose, only to be thrown into battle with two smaller, plodding enemies. The combat is simple but unforgiving, requiring deliberate use of light and heavy attacks, defense, and a life-saving roll. As I swipe at the foes, the giant's arm comes crashing through the doorway right in front of me — the effect is so powerful that I actually jump and yell out loud, an embarrassing-but-true admission.

Thanks to the ominous environments, deadly combat, and strong sense of immersion, I can't wait to see what other secrets await deeper in Chronos' labyrinth. —**JEFF MARCHIAFAVA**





FANTASTIC CONTRAPTION AN ENGINEERING FEVER DREAM

Platform: Vive Developer: Northway Games

Originally designed in 2008 as a 2D building simulator, Northway Games' indie experiment never really clicked with its creators until they started building wacky machines in virtual reality. The newest update to the game is still bizarre. Thankfully, it's also bizarrely engrossing.

Players begin by dropping onto a grassy island floating high in the sky. They are then given a collection of odd parts and tasked

with building a machine that will carry a small ball to a goal on the other side of the island. Fantastic Contraption's basics mechanics sound simple, but the contraptions that players can construct are anything but.

The first creature I encountered in Fantastic Contraption's cartoon world was an unusual cat composed of an assortment of odd tools. Anytime you pull one of these parts off the cat's back, it is instantly replaced, giving you

an endless supply of mechanical parts for construction.

I started by pulling a tube off the cat's back and used both of the Vive's wands to manipulate the tube. It stretched and shrank like a balloon. The ends of these tubes easily snap to new tubes, which allowed me to build boxes and other mechanical arms to hold my ball. These pipes also come in a couple different varieties: Stiffer tubes offer a lot of support, while rubbery tubes have

more give for contraptions that bounce all over the environment.

Next up, I pulled a cylinder off the cat's back and set it on the floor. After hitting an activation button on the Vive's wand, the cylinder started spinning and rolled off the end of the island. Using four cylinders and a series of tubes, I created a makeshift car to carry my ball over to the goal on the other side of the island.

Each successive island features a goal that is slightly harder to reach. Thankfully, constructing new contraptions is as relaxing and zen-like as putting together a box of Lego bricks. Northway Games says that players can build contraptions that are as big as a horse, and has even programmed a spectator mode so friends can watch what players build on the TV and offer suggestions.

We're not sure how many friends we'll want watching as we build our engineering monstrosities, but Fantastic Contraption is such a relaxing experience that it could appeal to the junior inventor inside us all when it officially releases sometime in 2016.

— BEN REEVES





ARIZONA SUNSHINE

FUN IN THE SUN

Platform: Vive Developer: Vertigo Games and Jaywalkers Interactive

The sun might be shining in the Grand Canyon State, but you won't want to take a walk through this zombie-infested wilderness. Set sometime after the undead hordes have become Earth's dominant species, you play as a lone survivor who hears a snippet of human dialogue over the radio and then sets off on a journey to reunite with the last of your kind.

Arizona Sunshine is more methodical than most zombie games, in that it trickles out an uneven stream of zombies to shoot down before they eat your brain. This doesn't mean that the action is any less intense, however. During my time under the Arizona sun, I was constantly paranoid and looking over my shoulders, expecting a zombie to sneak up behind me.

The gunplay feels pretty good,

but depends on how steady your hands are, seeing as you have to physically aim at your targets using the Vive's wands. But this makes nailing headshots even more satisfying than a traditional shooter. If enemies get too close, you can try to physically dodge out of their way and reposition for a headshot, but you can't walk across the entire game. Once you've cleared out a zone, you

can teleport to the next area by shooting at it.

Arizona Sunshine is built to be played in bite-sized chapters that flow together into a larger story. At this point we don't know if the game features any gameplay other than the basic shooting mechanics, but these short shootouts were compelling enough to keep us interested until its release sometime next year. **—BEN REEVES**

MOONSTRIKE

PUTTING YOU RIGHT IN THE STRATEGY

Platform: Rift, Vive Developer: Big Dorks Entertainment

MoonStrike is a real-time strategy game where you command a massive space fleet and try to eliminate opposing factions. On the surface, the game doesn't look all that fancy or interesting. However, once you delve deeper, it's fun to figure out strategies to outsmart your opponents.

Using the Rift's Touch controller, you reach out and select your fleets, then you hold a button to choose the planet you want to attack. When you're targeting a

planet, a gold circle appears to let you know this is where you're sending ships. Above every battle station is a number showing your fleet's strength. You want to target weaker bases, thus growing your team to take down larger rival planets. It becomes a game about having the right numbers, but seeing your fleets grow is satisfying, and deciding where to send them for the most success kept me thinking. Because everything plays out in real time, you can't spend forever

debating your moves; you need to act quickly, but not carelessly, to obtain victory.

At first, I focused on going after the big planets, but then realized the advantage of chipping away at smaller planets that were near my fleets. Ships take time to travel, so you want to capture as many rival space stations in areas near you early to build up your numbers (and so you don't have to go back to them later). The VR experience makes it feel like you're in the middle of a big board game

and moving all the parts, but you get to see all the spectacle play out right in front of you. It has a chaos that can only be felt by actually being inside the space and seeing the ship movements and explosions happen before you.

MoonStrike is still a work in progress, but holds a lot of promise for strategy fans. The developer, Big Dorks Entertainment, plans to have unique abilities for different races, which could make the strategy even more cogitative. **—KIMBERLEY WALLACE**





GOLEM

TRYING TO SET A CONTROL STANDARD

Platform: PlayStation VR Developer: Highwire Games

Jamie Griesemer worked at Bungie on games like *Myth II*, *Halo 3*, and *Halo: Reach* before moving to Sucker Punch to become lead designer on *Infamous: Second Son*. However, after wrapping up work on *Second Son's* DLC, Griesemer decided that he didn't want to work on another triple-A game with a giant team. Instead, he joined forces with Halo composer Marty O'Donnell and a group of artists and programmers who have worked on games like *Destiny* and *Half-Life*. Together they formed Highwire Games, a smaller studio hoping to create games that feel like big-budget productions.

"One of the best times in my career was shipping the original Xbox," Griesemer says. "I loved giving the guys that were designing the controller feedback and helping them perfect the controller, which helped us improve Halo. It was such a cool feedback loop. But now, I'm to the point where I don't want to work on another first-person game and solve all of the exact same problems and

end up with roughly the same solutions that I've done 10 times already. I want something brand new. That brought us to VR."

Highwire's first project is a PlayStation VR game called *Golem*. Set in an ancient fantasy world, *Golem* casts users in the role of a young girl named Twine. After suffering a severe injury that leaves her paralyzed, Twine feels trapped in the prison that is her bed. However, she soon discovers a magical gift that allows her to psionically control a series of enormous stone Golems. At night, Twine uses these Golems to scavenge a nearby abandoned city for unique treasures that allow her to upgrade her behemoths and dive deeper into the city.

Highwire's unique twist is how it allows users to freely explore Twine's VR world without using a thumbstick. Instead of using a traditional control scheme, players move Golems around by tilting their heads in the direction they want to travel. In order to turn your Golem left or right, players simply have to look in that direction and tilt their head

slightly. Highwire says this form of movement helps mitigate the VR sickness that users often experience when playing first-person games with a traditional analog stick.

"We want to try to do what we did with Halo, where we took the controller and elevated the controls to fit the game," Griesemer says. "It feels like a lot of VR games are bringing the game down to the level of the controls. 'Well, we can't move you around, so we're just going to make a game where you can't move.' That doesn't seem right, so we asked ourselves, 'What would be the Halo standard controls for VR?'"

While visiting Highwire's studio, I threw on a PlayStation VR headset and tested out these unique controls for myself. Initially this type of movement was a little jarring, but after a few minutes, I started to feel more competent and realized that I didn't have to tilt my head very far to move through the environment. *Golem's* controls seem promising, but only time will tell if they

become the new VR standard.

Highwire's combat system also tries to do something new. When players encounter a monster, they're free to engage in bladed combat using a free-movement system; their motions with a PlayStation Move controller correspond one-to-one with the movements of their *Golem's* sword. You don't have to be an expert swordsman to play this game. One enemy I encountered telegraphed his sword strikes well enough that I was able to block each attack quickly and then perform a thrust against his weak zone. This kind of combat could provide a workout, but it might appeal to a crowd eager for more realistic action.

Highwire is taking a chance with a new technology and trying to solve some of the early challenges of designing games in VR. The project itself is still in a state of flux, so it's possible that it will evolve quite a bit before it finally ships. However, given Highwire's collective experience in the industry, *Golem* could be a project worth watching. —BEN REEVES



MODERN ZOMBIE TAXI COMPANY EVOLVING BEYOND BRAIN MUNCHING

Platform: PlayStation VR Developer: Vitei

Many games that take place during or after the zombie apocalypse deliver a bleak look at what existence has become in the years since the first flesh-eaters rose from their graves. Vitei's *Modern Zombie Taxi Company* takes place thousands of years after the end of humanity. Zombies have evolved past the point of consuming flesh and have built a bright, civilized society.

In this world, you assume the role of a taxi driver in a town called Zombieton and are responsible

for getting these quirky zombies where they need to go. Your mission is simple: Make as much money as you can before the day comes to a close. Using PlayStation VR and a DualShock 4 controller, you drive around in first-person and pick up zombies requesting a cab. With the PlayStation Camera's ability to track the DualShock 4's motion, you can even move your controller to push zombies out of your way if they wander into your view.

While delivering zombies to their requested destination as

fast as possible is one way to make your score skyrocket, you can also achieve this by picking up a number of different power-ups scattered throughout the area. The power-ups aren't always the most helpful, ranging from a Gatling gun that shoots valuable targets as you drive by to an item that does nothing but fill your taxi with beach balls. Sometimes they're superficial, such as the boom box, which makes zombies outside of your car stop to dance when you drive by.

Once the zombies are in your car, rushing to get them to their destinations of choice can be tricky, as Zombieton is populated with obstacles and other cars. While you can ram right through fences, streetlights, and fruit stands, running into a thick tree or a bus sends your passengers flying – sometimes right through the windshield. However, reckless driving can be your ally, as your zombie patrons will reward you for getting them to their destination and giving them a little fun along the way.

Other opportunities exist to raise your score, such as ramming a giant soccer ball into a goal, or launching a child zombie through the air by driving your car onto the other side of the see-saw. These bonus opportunities are designed to incentivize you to explore Zombieton even during a fast-paced run.

After your day is over, you receive a verdict on your performance, and then can retreat to your home. Once there, you can compare your scores against your previous efforts as well as your friends' best runs.

Modern Zombie Taxi Company pulls together a quirky sense of humor, colorful graphics, and a Crazy Taxi-esque premise. It remains to be seen if those elements can deliver the same levels of insanity that *Crazy Taxi* does while in first-person without affecting those who are susceptible to simulation sickness. If Vitei is successful, *Modern Zombie Taxi Company* could scratch that itch for frantic arcade-driving action within the VR space.

—BRIAN SHEA





UNTIL DAWN: RUSH OF BLOOD SCREAMING DOWN THE TRACKS

Platform: PlayStation VR Developer: Supermassive Games

One of the most surprising hits on PlayStation 4 in 2015 was Supermassive Games' *Until Dawn*. The adventure horror game struck a commendable balance between telling a tight narrative and exploring meaningful decisions through permanence of choice. With its new standalone VR experience, *Until Dawn: Rush of Blood*, Supermassive is changing the formula dramatically by implementing several elements from the source material into a first-person on-rails shooter for PlayStation VR.

In *Rush of Blood*, players hop aboard a mine cart as they roll down the tracks, dual-wielding

guns. If the sense of speed on this rickety rollercoaster in VR isn't enough to make you sweat, the grotesque creatures that pop out at you haunted house-style will certainly get your heart racing. Using the PlayStation Move controllers for your guns, you must defend yourself as you make your way through the dark corridors.

One of the key elements of *Until Dawn* was the butterfly effect mechanic, which showed how your decisions impacted the subsequent events in the game's story. According to Simon Harris, executive producer of *Until Dawn: Rush of Blood*, just as the genre shifts from the 2015 PS4

game to this VR experience, so too does the way choices are implemented. "As *Until Dawn: Rush of Blood* is a different experience and is completely action oriented, we don't have choices around conversations and narrative, but we have implemented choices around the action and these impact your play experience as well as key elements that are core for the arcade shooter genre, so things like scoring and weapons," he says.

Despite so many deviations from the original formula, Harris says the team is using a lot of what it learned during *Until Dawn's* development to craft

the horror experience of *Rush of Blood*. "We spent a great deal of time researching, developing, and understanding the language and formulas of horror, which means we have a lot of knowledge and experience within the studio," he says. "Our accumulated knowledge tells us that pacing is critical to achieve effective horror, so we use the rollercoaster aspect of *Until Dawn: Rush of Blood* carefully to deliver that pacing on rails, without the player ever needing to control it. We can vary the intensity of the experience through a really fast rollercoaster section, or a section with loads of enemies and shooting, through to a slower ride through a location, really building the tension and using the darkness in the game to ratchet up the player's heart rate in a different way."

Horror junkies who loved *Until Dawn* may be disappointed that *Rush of Blood* is such a different experience, but with Supermassive still promising tons of thrills while preserving the environmental aspects that gave the first game such great atmosphere, *Rush of Blood* looks like it could be one of the more intense experiences in PlayStation VR's early lineup. —BRIAN SHEA





HEADMASTER

HEADING IN THE RIGHT DIRECTION

Platform: PlayStation VR Developer: Frame Interactive

Imagine being one of the greatest professional athletes on the planet in a world where your sport is a huge deal. The fame and fortune would be undeniably awesome, but with the ups come the downs, as any superstar athlete can tell you. In *Headmaster*, you are placed in the shoes of an underperforming soccer star who is imprisoned in a facility by his team and forced to practice heading the ball into the goal and at specific targets.

My controller-less demo begins in a dark field. I look around, but not much is illuminated aside from the area immediately around me. A voice blares over the PA system instructing me that as a part of my contract, I need to achieve a certain score in the following drills before I can leave the facility. A scoreboard lights up and a spotlight turns on to reveal a goal directly in front of me and the drills begin.

As the first sequence starts, a cannon lights up and begins firing soccer balls my way. As the first ball rapidly approaches, I thrust my head forward, but the ball doesn't go in the direction I think it should. Founder of Frame Interactive Ben Throop instructs me that I should use my hips

more than my actual head. I try his method and sure enough the ball goes right in the goal.

"On one hand, bouncing something off of our foreheads is a totally intuitive idea. Yet at the same time, doing that with precision is not exactly easy," he says. "This brings us to the old video game adage, 'Easy to learn, difficult to master' and *Headmaster* has proven to be that type of game. Using your hips to move your head in a rocking motion just happens to be a good way to get velocity while still being accurate."

Even though I have the motion down, Throop's assessment of the difficulty of *Headmaster* proves true. As more targets pop up and the balls begin flying from multiple cannons, I struggle with achieving the minimum score. Even so, each successful shot is satisfying and I manage to squeak in over the minimum threshold to pass. I am awarded with a piñata, which I'm required to bust open by heading balls into it. The demo has a dystopian, *Portal* feel to it, something I hope shines even more in the full product.

According to Throop, the final *Headmaster* experience includes much more than what I played. "There's a solid single-player mode

with a progression that builds story and character," he says. "We're working on other features as well that I'm really excited about, such as a local multiplayer party mode where you take turns in the headset while your friends watch on the TV. Ultimately we want *Headmaster* to be a great gamer's game, something that anyone with a PlayStation VR would have fun with and enjoy sharing with friends."

With accessible gameplay, simple design, and an entertaining sense of humor, *Headmaster* plays extremely well and is one of the best demos I've seen on PlayStation VR. If the final game can deliver more depth through the various planned modes, it could serve as a strong demonstration for what developers can achieve with PlayStation VR without needing to include any controller input. —BRIAN SHEA



PLAYSTATION PRAISE

During our chat with Sony's president of worldwide studios for Sony Computer Entertainment Shuhei Yoshida, he was quick to praise Frame Interactive's unique VR game. "Headmaster is brilliant as an indie," he says. "You don't have to create lots of assets, but you can still create the fun VR game experience. When I do a talk to developers, especially indie developers, I point to *Headmaster*."



RIGS: MECHANIZED COMBAT LEAGUE

THE VIRTUAL SPORT OF THE FUTURE

Platform: PlayStation VR Developer: Guerrilla Cambridge

Try to imagine what virtual reality sports might look like in a sci-fi future, and you might end up describing something like Rigs. This 3v3 competitive shooter places players in the cockpits of mechanical Rigs, each outfitted with artillery to take out opponents. The mode we played, Power Slam, wasn't as straightforward as blasting apart the competition, though. Power Slam has as much in common with basketball

as it does team deathmatch. Unfortunately, the fast-paced combat also makes it an easy bet for simulation sickness.

The match begins with the players ascending into the Power Slam court from underground elevators. The arena is big, colorful, and plastered with ads for fictitious companies. Rigs developer Guerrilla Cambridge (MediEvil, Killzone: Mercenary) sells the authenticity of the futuristic mech sport well.

In Power Slam, players blast apart the other team to generate power orbs and collect them to unlock overdrive. In overdrive mode you're faster, stronger, and regen health quicker, but most importantly you can jump through a huge hoop in the middle of the arena to score a point. Each team's goal is to slam dunk themselves through the goal while shooting apart opponents trying to do the same.

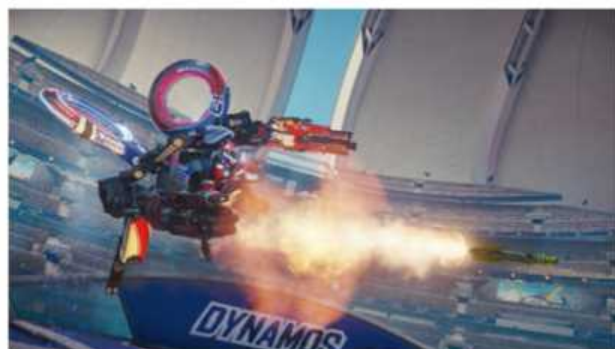
A variety of mechs are up for grabs, and I geared up with the Tempest. This archetype allows players to hover high above the battlefield, offering a great vantage point to blast your rivals with dual rocket launchers. Controlling my rig came naturally, combining familiar first-person controls with head movement. The DualShock 4 controller works well in concert with the PlayStation VR kit, which is used to look around and aim your guns. To my surprise, within a minute I was jumping and hovering around the battlefield while deftly

gunning down opponents. The VR aspect of the Rigs feels like a natural extension of time-honed shooter skills.

And then my stomach turned, as did the stomachs of most every Game Informer editor who suited up for Rigs. The fast-paced action, lofty jump heights, and head-movement-based targeting combine into a potent cocktail for simulation sickness. We all lasted the match, but complained across the board about dull stomach discomfort for the next hour or so.

Rigs packs some of the most fun I've had with VR since the scene first began developing, but my enthusiasm is tempered by the number it plays on my stomach. To Guerrilla Cambridge's credit, the experience is genuine enough to trick my mind (and stomach) into thinking I'm actually piloting a crazy flying mech. Maybe the queasy symptoms will fade with more hours spent in a mech, but only time will tell.

—TIM TURI





ROBINSON: THE JOURNEY EVADING EXTINCTION

***** Platform: PlayStation VR Developer: Crytek *****

Crytek's technical prowess is on full display with its foray into virtual reality. Robinson: The Journey is one of the nicest-looking VR games we've seen to this point. Players control a young boy who has crash landed on a dinosaur-infested planet.

"We had watched a NASA video about going to Mars, and this really inspired us to create an experience that tapped into the spirit of exploration," says executive producer Elijah Freeman. "Robinson was born out of the basic human motivation to want to explore the unknown... just in VR. The dinosaurs and their role in the experience grew to represent wild nature, a pure embodiment of danger to an explorer. From those basic ideas the concept phase gelled and became what people have seen so far."

Using the 360-degree views delivered by virtual reality, Crytek hopes to deliver an unparalleled sense of what it would feel like to be surrounded by these Jurassic leviathans. Looking a hungry Tyrannosaurus rex in the eye might not be that daunting in a standard video game, but in a VR game, it's downright terrifying.

"As game developers, VR presents a wealth of fresh opportunities," Freeman says. "The way we build worlds, the way we create emotion, and the way we see players reacting are all different. The main advantage is that the game worlds we'll be inviting players into feel truly alive, and that is an incredible foundation to build on."

Crytek hasn't offered a hands-on demo for Robinson: The Journey yet, but a trailer shows players trying to avoid getting trampled, striving to remain as still as possible while a dangerous carnivore sizes them up, and sitting in a nest as dinosaur eggs hatch around them. If these moments are any indication of what to expect when Robinson: The Journey launches, it could be an intense ride that immerses players in a prehistoric world like never before. Crytek says it's bringing Robinson: The Journey to PlayStation VR first, but other platforms are possible. —**BRIAN SHEA**



SUPER HYPERCUBE TWISTING, TURNING, AND SOLVING

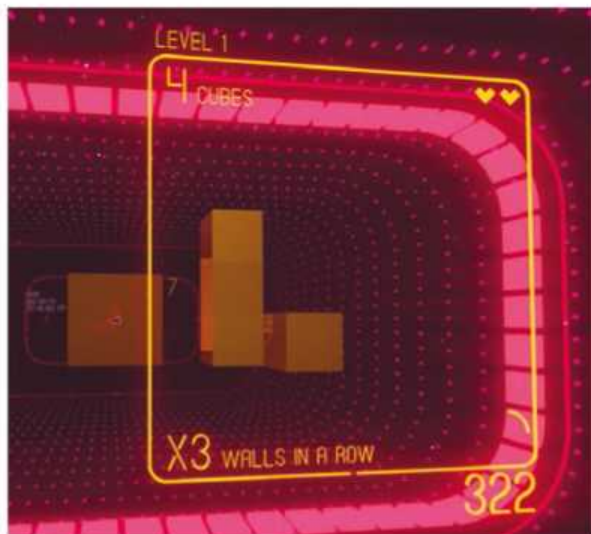
***** Platform: PlayStation VR Developer: Kokoromi *****

Puzzle games have been staples of new platform launches for generations, and Super Hypercube plays that role for PlayStation VR.

The simple premise tasks players with lining up three-dimensional puzzle pieces with differently shaped holes. You use the PS4 controller to twist and rotate the puzzle piece to match it up with the silhouetted opening as you slowly move toward it. Imagine Tetris or one of those game shows where people contort their bodies to fit into a weird shape.

The PlayStation VR feature in this game is weaker than many Sony has been showing off, but it's still cool. The VR effect brings home the sensation of hurtling through hyperspace behind an oddly shaped cube. You can also move your head to peek around the puzzle piece, which sometimes obstructs your view of the incoming hole.

Besides soaking in the fun, neon, wireframe visuals, the other main draw of Super Hypercube is to crank out the highest score you can and compete against your friends on the leaderboards. For a game built on the childhood challenge of fitting shaped blocks into the correct holes, it's surprisingly captivating. —**TIM TURI**





NARCOSIS

DANGER UNDER THE SEA

***** Platform: Rift Developer: Honor Code *****

As we look to the stars, fantasizing about what might live out in the unknown expanse, we often forget about the alien world here on Earth. Deep below the surface of our oceans is a largely unexplored world, and in *Narcosis*, you're the interloper at the bottom of the sea.

Stepping into the pressurized suit of an industrial diver mining methane hydrate on the bottom of the ocean is a disconcerting experience. We've been trained to expect the horror of *BioShock's* splicers and *Soma's* WAU-infested monstrosities. By comparison, *Narcosis* is mundane. An accident at the start of the game leaves players stranded, low on oxygen, and among hostile creatures looking for their next meal.

The goal is simple: Survive long enough to reach the surface. Unfortunately, the human mind can be a treacherous thing. Developer Honor Code is using oxygen deprivation to create "narcosis moments" that mutate players' perception of the world, twisting it into something even more unrecognizable and psychologically taxing. These are signified by the player's virtual eyes fluttering, which creates a compelling effect of disorientation in first-person view. These moments manifest as plant growth inside the suit, spectral images in the distance, and impossible contortions of space. All of this is punctuated by an inner monologue that tells the story of the ill-fated diver.

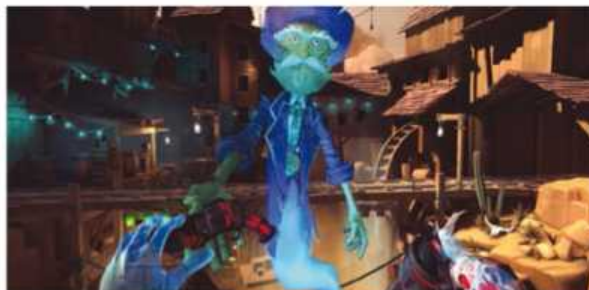
Narcosis' presentation of survival horror isn't unique, but the illusion of claustrophobia is potent because of the diving suit's dual nature. It is a hardened shell, protecting the player from water, creatures, and the deep-sea pressure. It is safe, but it is also a tomb. The entire game takes place within the confines of the suit, as breath clouds the visor, echoing in the helmet. Reaching the surface is the only way out.

Players need to find additional oxygen, fend off hungry sealife, and navigate treacherous undersea terrain with only flares to help light the way. Tense situations increase the character's rate of breathing, further taxing the limited supply. Propeller thrusters allow for limited vertical movement as players work to ascend to freedom.

Unlike many virtual reality games that map camera control to 360-degree head movement, *Narcosis* puts everything on the gamepad. Turning my head reminded me that I was inside a rigid outer shell, and instead of looking around allowed me to get closer to the glass and glance down at my oxygen and flare gauges. This helped sell the illusion that I was trapped in an oppressively confined space.

All told, *Narcosis* will be a four- to five-hour experience when it launches next year. In virtual reality, that will likely feel significantly longer as players give in to the illusion that the only thing between them and the crushing grip of the ocean is a walking coffin.

—MICHAEL FUTTER



DEAD AND BURIED

A WILD, WILD TOUCH SHOOTER

***** Platform: Rift Developer: Oculus Studios *****

The cowboy or cowgirl in you will come alive when you're grabbing your virtual gun for target practice in *Dead and Buried*. The game is built specifically for the Oculus' Touch controllers, allowing you to see your hands in the game as you grip your pistols.

At the start, you're greeted by a ghostly cowboy, complete with bullet holes in his attire. This blast from the past is here to show you the ropes, offering two revolvers for you to reach out and grasp. Using the Touch controller, you press the button on the side to grab objects. With your hands locked on the guns, the targets come out. At first, easy bullseyes pop up, and aiming with the Touch is no problem; you simply point at the target and with a click of a button shots fire. A blue laser sight appears as you turn in the direction of your targets in the distance, giving you a better chance to line up your shot, but it fades quickly as to not make things too easy.

The targets get progressively tougher and farther away. Some are on moving mining carts, while others are bottles high in the sky. At first I'm focused on just using one of my two pistols, alternating between them depending on which side the target it on, but soon the game challenges me to use both guns at once while it ramps up the speed of targets. This is when you feel like your guns are blazing, trying to hit myriad targets and barely having a chance to secure your aim.

The Touch controller tracks your hands so accurately that there's very little room for error, and that's where the real challenge comes in. Even reloading is fun, as you whip the gun to the side to discard your used casings and lift the gun up to spin it shut with new shells. Getting into a shooting and reloading rhythm is fun, and the experience makes you feel like a real gunslinger.

Dead and Buried is an entertaining shooting extravaganza, and another title that shows the potential for first-person shooters with the Touch controls. The precise targeting makes me excited to see what else arises. —KIMBERLEY WALLACE



COMPARING THE VR LINEUPS /

Check out the lists of the most prominent titles coming to the Oculus Rift, PlayStation VR, and HTC Vive



OCULUS RIFT

- 4089: Ghost Within
- Adr1ft
- Aeon Alpha
- AirMech VR
- Albino Lullaby
- Alien Isolation
- Among the Sleep
- Ark: Survival Evolved
- Assetto Corsa
- Battlezone
- BlazeRush
- Bullet Train
- Chronos
- Damaged
- Damaged Core
- Darkfield VR
- Darknet
- Dead and Buried
- Digital Combat Simulator World
- Dirt: Rally
- DolphinVR
- Dreadhalls
- Dying Light
- Edge of Nowhere
- Elite: Dangerous (pictured)
- Enemy Starfighter
- Esper
- Estranged: Act I
- Euclidean
- EVE: Valkyrie
- Fistful of Frags
- Forest, The
- Formula C
- Frontiers
- Gallery: Six Elements, The
- Gon' E-Choo!
- Herobound: Spirit Champion
- High Fidelity
- Holodance
- I Expect You to Die
- iOMoon
- iRacing
- Job Simulator
- Jump
- Keep Talking and Nobody Explodes
- Land's End
- Licht: Little Adventure
- The Long Dark
- Lucky's Tale
- Meltdown
- Minecraft
- MoonStrike
- Motorbike
- Narcosis
- Null of Hope
- Obduction
- Project Cars
- Proton Pulse
- Pulsar Arena
- Radial-G
- Retrovirus
- Shufflepuck Cantina Deluxe VR
- SphereFace
- Star Conflict
- Star Citizen
- Strafe
- Strike Suit Zero
- Sublevel Zero
- Subnautica
- Super Hot
- Surgeon Simulator ER
- Synthesis Universe
- Team Fortress 2
- Technolust
- Time Machine VR
- Time Rifters
- Toybox Turbos
- Vanguard V
- Vanishing of Ethan Carter, The
- Vendetta Online
- VR Sports Challenge
- War Thunder
- Windlands
- World of Diving
- Xing: The Land Beyond

PLAYSTATION VR

- Adr1ft
- Albino Lullaby
- Allison Road
- Ark: Survival Evolved
- Assembly, The
- Atom Universe
- Battlezone
- Bebylon Battle Royale
- Cyber Danganronpa VR: Class Trial
- Dead or Alive Xtreme 3
- Dead Secret
- The Deep
- Dreams
- DriveClub VR
- The Earthlight Project
- EVE: Valkyrie
- Fated
- Futuridium VR
- Gallery: Six Elements, The
- Get Even
- Gnog
- Godling
- Golem
- Gran Turismo Sport
- Harmonix Music VR
- Hatsune Miku: Project VR
- Headmaster
- Hyper Void
- The Hum: Abductions
- iOMoon
- JoysoundVR
- Jurassic Encounter
- Keep Talking and Nobody Explodes
- Loading Human
- The London Heist
- Megaton Rainfall
- Mind: Path to Thalamus
- Mortal Blitz
- Nighttime Terror 2
- Omega Agent
- Paranormal Activity VR
- Playroom VR, The
- Pollen
- Project Cars
- Radial-G: Racing Revolved
- Rigs: Mechanized Combat League
- Robinson: The Journey
- Summer Lesson
- Super Hypercube
- Synthesis Universe -Maze-
- Technolust
- Tekken 7
- Trackmania Turbo
- Until Dawn: Rush of Blood
- Vanguard V
- VizionEck
- Volume: Coda
- Wayward Sky
- White Day
- World War Toons

HTC VIVE

- Adr1ft
- Apple Pie Jones
- Arizona Sunshine
- Assembly, The
- Battlezone
- Chef's Kitchen
- Chunks
- Convrge
- Crystal Rift
- Elite: Dangerous
- Fantastic Contraption
- Gallery: Six Elements, The
- Golf Masters
- Hatton Garden Heist
- Holodance
- Hover Junkers
- Job Simulator
- Longbow
- Lucid Trips
- Mutato Match
- Omega Agent
- Paranormal Activity VR
- Pollen
- Portal
- Quar VR
- Radial-G
- Skyworld
- Technolust
- TheBlu: Encounter
- Train Simulator
- The Witness
- World of Diving
- World War Toons



GOING BEYOND GAMES /

Virtual reality has one foot firmly planted in gaming, but the tech possibilities stretch well beyond the confines of interactive entertainment

by Brian Shea

THE FUTURE OF ENTERTAINMENT

As gamers focus squarely on how virtual reality technology can enhance their favorite pastime, new applications for VR are popping up seemingly every day that stretch well beyond the boundaries of these play spaces. Other avenues of media, entertainment, and education are exploring virtual reality as a way to engage their audiences in unprecedented ways.

The virtual reality market is ripe for the taking for many entertainment options. Going to see your favorite comedian in a legendary comedy club or witnessing a Broadway play from the comfort of your home could be an incredible alternative to live performances for many people. Sports teams could begin selling virtual tickets to big games.

In fact, using VR to create compelling entertainment is already occurring. In 2015, Apple partnered with rock band U2 to deliver a virtual reality experience using the Gear VR headset. The demo let fans experience the music video for "Song for Someone" in a 360-degree

space, giving them the ability to insert themselves into a U2 performance on stage.

Major movie studios are working to bring classic and recent films to the Oculus Rift with minimal new features to test the waters, but Oculus is also taking matters into its own hands with Oculus Story Studio, an internal movie division with two short films under its belt. The studio's latest work, *Henry*, has the look and feel of a Pixar film, starring a lovable but lonely computer-generated hedgehog.

Once I strapped in and sat down, I was transported to the titular character's house on his birthday. A story played out in front of me just as a standard film's would up on the silver screen, but with the Rift around my face I could look all around me as the action unfolded in the house I was virtually sitting in. The charming short shows how effective virtual reality can be for storytellers who want to insert their audience into the middle of the action.

One of the most important industries for the VR frontier

could be adult entertainment. Analysts typically credit this industry for turning the tides in past technology wars like the victories of VHS over Betamax. Virtual reality pornography already exists for those who own pre-release or development headsets, and it will likely have a more prominent presence following the retail launches of the Rift, Vive, and PlayStation VR.

LIVING THROUGH HISTORY

The New York Times recently revealed a venture called NYT VR, which allows you to experience its news pieces in virtual reality, though its first stories weren't as feature rich as many were hoping. While this early implementation of seeing special news sequences in virtual reality isn't the game-changing experience we had hoped for, it's an interesting proof of concept and is something that can be expanded on in the future.

Taking the idea that *The New York Times* implemented a step further, one team has already captured a glimpse at the

potential of this technology when it comes to historic events. In an experience for Samsung's Gear VR, we virtually sat in a room and watched Bill Clinton speak. The talk, which was captured by a 360-degree camera, allowed us to get an idea of what it's like to live through certain moments.

While the idea of placing ourselves back in time to see what it's like to walk among the dinosaurs or be on the *Titanic* during its final moments is intriguing, imagine the ability to put on a VR headset and be instantly transported to a presidential inauguration or even stream live news in ways never before seen. It's not outlandish to think that a major news network could bring a 360-degree camera to broadcast from special events or sites of breaking news to give its viewers the feeling of actually witnessing what is happening first-hand as the action unfolds in real-time.

The same appeal could exist for those who want to travel but don't have the means, time, or ability. Being able to visit the pyramids or take part in the running of the bulls may sound



The New York Times' NYT VR released a piece called *The Displaced*, which let you experience the publications' content in virtual reality

like a fantasy, but if someone gets the correct technology on location at one of those destinations, it could be the next best thing to actually visiting those places.

TRAINING YOUR BRAIN

VR tech could also help you build skills through training scenarios. While the motion-controlled experiences we've played haven't exactly worked with surgical precision, it stands to reason that as the technology matures, a surgeon in training could learn more about operating through virtual reality. For some professions and passions, that future is now.

A company called Strivr Labs is using Oculus Rift headsets to help train quarterbacks on how to read defensive coverage better during football games. The program is meant to act as an alternative to film study and group-intensive practice drills that accomplish the same goals. By using this technology to train the quarterback's brain and eyes, the Strivr program familiarizes players with certain

coverages and blitz packages to make it feel more routine when the teams execute those defensive plays in a game situation. Strivr Labs' program is being used by a variety of football programs, including Stanford University, where it was created and first implemented, and NFL teams like the Minnesota

Vikings, San Francisco 49ers, and Dallas Cowboys.

A LASTING IMPACT

As one the highest grossing entertainment industries in the world, gaming will always play a part in driving virtual reality technology forward, but, the eventual impression it leaves on

society will be highly dependent on these other experiences. It's probable that the headset that can find viability while embracing these other applications of virtual reality could gain an advantage over its competition. VR is only in its infancy, and already the possibilities seem endless. ♦



Oculus Story Studio's other short film, *Lost*, is a much more atmospheric experience than the charming and lighthearted *Henry*



THE
YEAR
OF VR



1 INTO THE GREAT UNKNOWN /

We break down the prospects and challenges for the big three VR competitors

by Michael Futter

Decades of science-fiction imagining and technical experimentation come to fruition beginning this year. If Oculus, Sony, HTC, and Valve have their way, the hardware gamers bring home this year is only our first step. However, this still won't be the right time for everyone to jump in.

Virtual reality, like most new technologies, will begin with an early adopter phase. Early consumers who enjoy the experience will evangelize virtual reality and be the seed from which the market springs. While all three of the competitors will be working to sell the concept of immersive entertainment, each brings something different to the table.

OCULUS – THE MARKET PIONEER

It's not unreasonable to suggest that without Palmer Luckey and Oculus, the virtual reality revolution would be years away at best, and nonexistent at worst. Oculus has assembled a world-class team of scientists, engineers, and software experts to create a platform for entertainment, education, and social experiences.

Oculus (and Valve) face the challenge of significant computational requirements. However, with a general \$1,500 price point for those who are buying the PC/Rift bundle, consumers have a ballpark idea of what to expect.

Luckey and company have the potential to strike a decisive blow with an earlier headset launch, followed by shipping Touch opposite Sony and

Valve while the others are just getting started. From there, Oculus will begin to pursue its long-term goal of out-shipping its competitors.

"There's a real desire to see Oculus iterate as fast as possible on the hardware, and just continue to get out there and be relentless with shipping as fast as possible," Oculus CEO Brendan Iribe says. "We're going to go after a broader target audience, so we'll make it compatible with more and more machines. We're trying to do both of these in parallel."

VALVE – THE ENIGMATIC INNOVATOR

Valve's culture and independent status make it a bit of an enigma in the space. When the company announced its partnership with HTC and original plans to ship in 2015, it caught many off guard. Valve has a knack for doing its own thing and delivering for gamers in unexpected ways. Because of Valve's position in the software space, it has the power to help motivate VR development and Steam's existing platform of more than 75 million users. Given that Sony has an install base of approximately 30 million PS4 owners and Oculus needs to build its store from scratch, Valve has a head start with a loyal PC audience.

The Vive experience is top-notch, but it comes with the trickiest hardware considerations of the bunch. The dual sensors that require mounting or tripods makes it the hardest to configure and the only option of the three that carries significant



space considerations at launch.

Valve has also been the most enigmatic about its software launch. The Valve name has power, and the company has been smart to offload some of the risk on HTC, but of the three we have the fewest details about launch lineup and price.

SONY – THE CONSOLE CONTENDER

Sony is riding high this generation, flipping the tables on Microsoft and taking a substantial lead. Given that PlayStation VR relies on the PS4, that's a key factor in Sony's potential success.

That said, Sony's history with ancillary devices isn't spectacular. The PSP Go, the Vita, PlayStation TV, Wonderbook, and Move have all wilted with meager support. Sony needs to make a big splash at retail to ensure that developers and major publishers continue to be incentivized on the platform.

Sony's greatest strength, the PlayStation 4, is also its greatest challenge. While Oculus begins the quest for yearly iteration and Valve has the potential for quick refresh cycles, Sony will be inhibited by PlayStation 4's static hardware features. PCs can be upgraded with more powerful graphics cards, improved processors, and more memory. The PlayStation 4 will remain the same, with new hardware years in the distance.

We also believe that Sony won't have much of a price advantage over Oculus and Valve. The company has repeatedly suggested that the PlayStation VR will cost as much as a new console.

BRINGING IT HOME

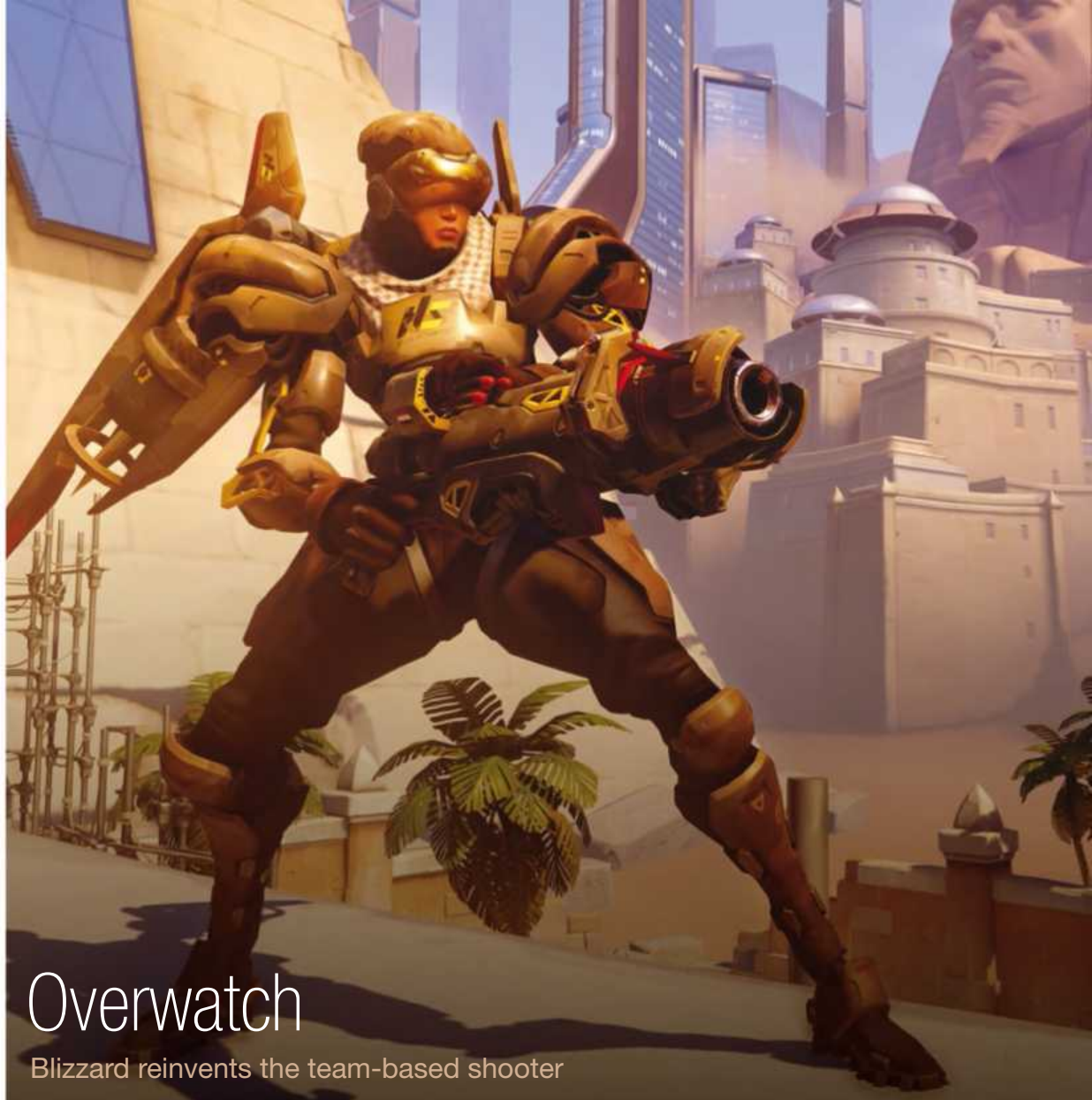
A few things need to happen before virtual reality reaches the broader market. We don't have fixed price points for any of the major competitors, but expecting \$400 to \$500 seems reasonable based on vague comments from Sony and Oculus. That needs to come down for a wider audience, which also makes the \$99 Gear VR a good entry point to the medium.

Comfort needs to continue to be a primary focus for platform holders. The first virtual reality experience is likely to sell the technology, but it can just as easily be a deal-breaker. Coming up with an orientation program for new users will take the guesswork out of first time use.

For those who are more focused on content, the "killer app" conversation is going to be a recurring one. Early games are likely to be shorter experiences and only slightly deviate from our 2D gaming experiences. It likely won't be until experimentation goes mainstream and new genres are created that VR becomes "must-have" for many. This is a typical product adoption curve, as technology evolves from innovators to early adopters and then to the mainstream.

Ultimately, we're bullish on virtual reality. The technology finally feels ripe and the content we've seen so far gives us glimpses of entirely new experiences we simply couldn't envision on a two-dimensional surface. What happens from here depends exclusively on the ingenuity of content creators. The tools are in place. Now the artists must go to work. ♦





Overwatch

Blizzard reinvents the team-based shooter

» **Platform**
PlayStation 4
Xbox One • PC

» **Style**
12-Player
Online Shooter

» **Publisher**
Blizzard Entertainment

» **Developer**
Blizzard Entertainment

» **Release**
Spring

An overwhelming number of character-driven, team-based shooters will be vying for the crown in 2016, and Blizzard's *Overwatch* is poised to make a strong showing as it heads to current-gen consoles and PC. The concept of *Overwatch* is utter simplicity – two teams of six players battle over objectives on a variety of maps. The action is online-only, with no single-player campaign.

This multiplayer focus has been attempted recently with games like *Titanfall* and *Evolve*, but their gameplay wasn't enough to keep them in the spotlight. *Overwatch* sets itself up for success by relying on accessibility combined with compelling gameplay that provides continual opportunities for skill and teamwork to shine. All characters are available at all times, which means that players can even switch characters multiple times in a single match to attempt to counter or adapt to the changing state of the game.

At first glance, *Overwatch* may seem too simple to have any real longevity. Characters have one or two modes of fire on their weapon and a handful of special, cooldown-based abilities. Players can snag any character from the roster and feel comfortable with the weapons and play styles in mere minutes, from Pharah's relentless rocket barrage to Reaper's stealth shotgunning. Only a few moments form the short path from selecting a hero to becoming accustomed to each weapon's rate of fire, passive special abilities like double-jumps, and using active abilities like venom mine to protect your sniper's perch or understanding that you should set up your turret in a tough-to-assault location with few lines of sight.

These abilities and characters lend themselves to advanced play that's a joy to discover as you move from match to match as an individual and a team. Learning how to blink past

enemy defenses to take out their turrets or snipers as Tracer, finding the perfect snipe spots on the map to take advantage of Widowmaker's grappling hook, or locating the perfect Bastion turret set-up position offers so much more to learn from situation to situation. Against a less-coordinated team, you may even want to take a defensive character like Bastion out on the offensive, and set yourself up as a mobile machine of death on top of the payload. As the transport moves toward the victory location, you have the chance to gun down dozens of enemy players as they trickle in. Against a stronger team that comes down on you from above or behind when you try this trick, you want to swap out for another character. Other essential learn-through-experimentation endeavors come with time, like McCree's Deadeye. If you just saunter out into the middle of the map and expect to clean up with your one-shotting



Freeze your opponents solid with Mei

ultimate quickdraw, expect to be shot down instantly with little success. But once you learn how to come out of hiding into a shooting gallery of targets you can pop for a game-changing victory, the satisfaction is overwhelming.

Overwatch gets even more interesting as you combine your individual abilities with your team. You naturally hide behind your massive shielded Reinhardt or keep your team healed up as Mercy, but many clever interactions appear when characters start to use their abilities together. As Mei, you can throw an ice wall anywhere in range, creating a huge physical barrier that can be climbed on that fully stops objects and characters – even a moving payload. Using abilities like that is pretty cool, but what's even cooler are the moments when you can pull an all-star play and pump the ice wall under a teammate for a massive momentary change in position. In the same moment, you save your turreted-up Bastion from a Tracer or Reaper ambush and provide a new vantage point from which to mow down opposing forces.

The inclusion of ultimate abilities is the final injection to the team-based formula that makes everything come together. Ultimates are powerful when used on their own in order to push toward or away from objectives, but can be game-altering when used together as a team. Integrated voice chat or simple key-notifications assist with this. When your team has been struggling for minutes to capture the final point, it may be time to coordinate ultimates in concert, as these potent moves provide ways to quickly clear or move enemies off of critical locations. The defenders will also be taking this into consideration.



A variety of special character skins like Slipstream Tracer come with the Origins edition of Overwatch

The progression system is still undergoing revisions. The Overwatch team is currently on the third iteration, finding during the second iteration that when they tied experience to characters, players would only use that character over and over. Since the game is focused on encouraging players to swap out heroes to adapt to the situation, this approach didn't make sense, and we don't know how things will play out for the final system. Since Overwatch doesn't have any new load-outs or characters to unlock, we can likely expect a system that rewards players with skins, spray paints, or other visual accoutrements.

Overwatch's fast matches and tight gameplay have my interest piqued. Amidst a sea of other hero-centric offerings, Blizzard's shooter ship appears ready to impress in churning, crowded waters. » **Daniel Tack**





The Witness

An extended journey into the Braid creator's new game

» **Platform**
PlayStation 4 • PC

» **Style**
1-Player Puzzle

» **Publisher**
Thekla Inc.

» **Developer**
Thekla Inc.

» **Release**
January 26

Jonathan Blow's post-Braid game, *The Witness*, has been in development for seven years now.

In that time, audiences have been introduced to the game's mix of line-drawing puzzles and island exploration. I didn't know what to make of the game at first. How could drawing lines remain interesting for any real length of time? Was that all there was to it? After spending nine hours playing the game, I now have a sense of how the seemingly simple concept is expertly stretched, twisted, and manipulated to become something far more fascinating than a surface reading might lead you to believe.

The biggest surprise was seeing how much variety can be extracted from what might seem like a one-note mechanic. As you move around the island in first-person, you encounter panels. Each one contains a puzzle, which, upon completion, builds toward a larger sequence. You might eventually open a gate or a series of shutters, which in turn open new routes to additional puzzles. These puzzles are as varied as the island's stunning regions, too.

The earliest puzzles function like mazes, where you simply have to draw a line from the opening position to an exit. The island is home to themed sections, from both architectural and natural perspectives to the types of puzzles you find as well. The greenhouse area is home to puzzles based on colors. In the hedge-maze zone, your footsteps light a path on a jumbo version of a panel. Sometimes you're joining symbols, other times you're dividing them with your line. Just as *Braid* married the ideas of a simple platformer and time-manipulation, *The Witness* merges exploration with those puzzles.

"What happens is that method of drawing lines is really just there to give a slate for the ideas to happen," Blow says. "That slate should be kind of blank and simple, because if it's really complicated, it'll mess with the ideas that you're trying to do."

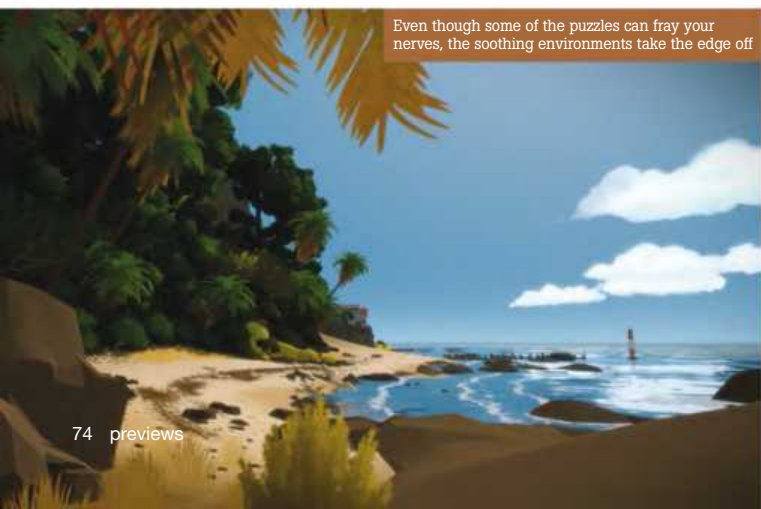
Unlike many puzzle games, where it's easy to find your progress blocked by a single puzzle, *The Witness*' open-island structure encourages players to move on when they get stuck. It was refreshing to know that I could leave a tricky

puzzle and progress in another direction. Whatever obstacle I left behind would still be there when I decided to return. And everything is conveyed through gameplay – there aren't any cinematics or text messages to steer players anywhere.

"I bristle actually when games try to hand-hold me too much, because I feel like it takes away the opportunity for me to have agency as a player," Blow says. "I want to decide what I should be thinking about right now, and the fricking game won't let me because it just popped up a hint that told me to talk to the old gray-haired guy in the corner, or whatever. I hate that. I wanted to make a game that respects people and lets them have the thoughts that they're going to have and lets them do the things they want to do in the order they want to do them."

I won't spoil them, but there are some truly breathtaking sequences in *The Witness* – one significant aspect of the game hasn't been discussed, and for good reason. Players will want to experience it for themselves, which they'll soon be able to at long last.

» **Jeff Cork**



Even though some of the puzzles can fray your nerves, the soothing environments take the edge off



The Witness' island is in a state of disrepair, which creates additional challenges to several otherwise straightforward puzzles

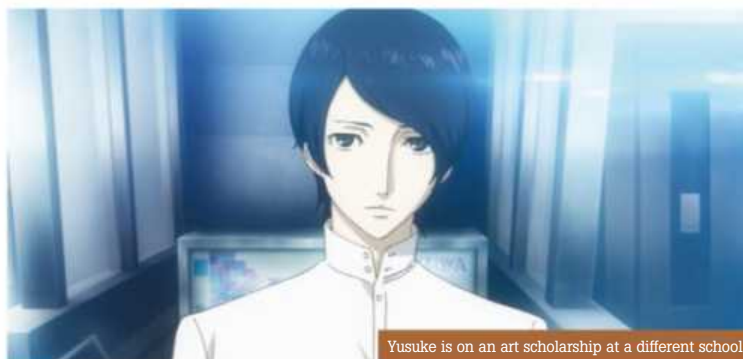
Persona 5

Stirring up societal change

Persona 5 is one of the most anticipated role-playing games on the horizon, even though the trailers haven't revealed many concrete details. The excitement isn't surprising; the Persona series' following has continued growing thanks to various spinoffs, despite the fact that fans haven't seen a mainline entry since 2008's Persona 4. Persona 5's recent delay into 2016 is disappointing, but while we're waiting, we took the opportunity to chat with director Katsura Hashino to get the lowdown on Atlus' long-awaited new entry.

Persona 5 has the cast tackling issues of modern-day society and characters feeling restrained by it. "Each of the characters, including the protagonist, has the mindset that – for one reason or another – they no longer have a place where they belong in society," Hashino says. When they find a way to enter a mysterious world, the characters take reforming society into their own hands. They become phantom thieves who steal malicious intent from people's hearts. In addition, every persona-user has an alter ego attached to a famous literary figure. For instance, the main character's is based off French writer Maurice Leblanc's "gentleman thief" Arsène Lupin.

The protagonist is still a representation of yourself, but you have opportunities to be more forward than in past games. "Since he's something of a



Yusuke is on an art scholarship at a different school

roughish antihero leading this story of thrilling phantom heists, we've added a nuance of brash audacity to his character," Hashino says.

Like previous installments, you still play as a high-school student who moves to a new place, except this time you're in an actual city instead of a fictional one. The venue is Tokyo, focusing on the Shibuya ward. "The story is set in Japan, but we believe the theme is universal," Hashino says. "Mankind's tendency to each view the world through their own individually distorted sense of reality – and its consequences on society and relationships – is a subject that resonates across the world."

Three other main human characters are also along for the ride: the mischievous Ryuji, sensitive artist Yusuke, and the isolated Ann (who spent time

abroad in America). A black cat named Morgana serves as the group's instructor and lives with the protagonist, but also has her own secret mission. "We can't go into any more detail right now, but the relationship between the protagonist and Morgana is much closer than others you've seen in previous titles," Hashino teases.

So far, Persona 5 looks even bolder than past games. The series has always confronted mature topics, but this time the characters are causing a stir in society and becoming masked vigilantes. They aren't reacting to events; they're causing them. As Hashino puts it: "Picaresque heroes are fun, and you might enjoy their exploits or admire them in a work of fiction, but whether you'd actually want to be like them is a whole different story, isn't it?"

» **Kimberley Wallace**



Ryuji, Ann, and the main character quickly form a bond during class

» **Platform**
PlayStation 4
PlayStation 3

» **Style**
1-Player Role-Playing

» **Publisher**
Atlus

» **Developer**
Atlus

» **Release**
2016



The Palace

Like Persona 3's Tartarus and Persona 4's TV, main characters enter a different world via the Palace, which is a place that exists in people's hearts. "The [characters'] mischievous sides, suppressed during their day-to-day school life, are released and visualized in the Palace as their respective phantom thief guises," says director Katsura Hashino. "Likewise, the persona's appearance reflects the corresponding team member's personality."



World Of Warcraft: Legion

Tapping into the past for the MMORPG future

» **Platform**
PC • Mac

» **Style**
MMORPG

» **Publisher**
Blizzard Entertainment

» **Developer**
Blizzard Entertainment

» **Release**
Summer

World of Warcraft is moving into its 11th year, and new ideas are still coming in to keep the legendary MMORPG relevant. The Legion expansion once again brings sweeping changes to the game. Some measures correct and refine systems that didn't work out, and others breathe new life into the core game through massive class changes and the artifact system. The new demon hunter class will inevitably attract hundreds of thousands of players on opening day, all looking to be the best disciple of Illidan around.

As with many expansions before it, Legion functions as a reset and a new beginning for everyone involved with World of Warcraft. Players receive a free level 100 character along with the expansion purchase to put them on par with the rest of the player base, and demon hunters start at level 98.

Legion features scaling zones and dungeons, which make for a more interesting leveling experience on the road to the new cap of 110. Players can

punch out the zones in any order, and all of the available "leveling dungeons" are available right away, so players who prefer to level up inside instanced experiences with a group get a solid mix of encounters and bosses along the way – not the same dungeon over and over again. As usual, a separate set of end-game dungeons becomes available once you hit level cap.

One of the major highlights of Legion is the new artifact system. Players continue progression past level 110 by adding power and relics to their special class and specialization-based artifact weapons. Artifact weapons are available right away during the expansion content, but players can customize them almost indefinitely, both visually and functionally, through continued play.

Almost functioning like a rack of available extra talents and powers, the artifact grows through activities like dungeons, raids, and other offerings. Players concerned that these artifact weapons negate the cool factor of

discovering a new weapon in a raid, fear not – special relics drop in those slots, adding a significant amount of power to your artifact weapon.

Class specializations are also getting a massive overhaul in Legion, dialing back from the sort of homogenized ideology that had turned classes into fire-and-forget slots over the last few years. In a sort of "take back your identity" shift that spills over into the artifact system, different specializations call out their unique identities and roles, shifting things a bit back to each player being a special snowflake instead of a generic cog in a machine.

In addition to these major aspects, professions are back in a big way after being cannibalized in Warlords of Draenor, and the polarizing garrison system is replaced by something players should find more palatable. World of Warcraft may be 11 years old, but Blizzard keeps finding ways to bring new life to the MMORPG that brought the genre into the mainstream.

» **Daniel Tack**

Class halls have some social functionality and will serve as player hubs





Dreams

From your imagination to the world

Media Molecule's games have been designed with an eye toward the crafts aisle, and *Dreams* keeps the studio's handmade aesthetic alive. Where *LittleBigPlanet* was seemingly constructed from yarn, felt, and found objects, and *Tearaway* kept things paper-flat, *Dreams* lets players shape their own imaginative fantasies from lumps of virtual clay. We first saw the game in a brief demo at E3 2015, and a recent presentation at Paris Games Week provided additional insight on this difficult to categorize title.

In *Dreams*, players can form, modify, and animate their own characters and objects, which can then be placed into animated vignettes or games. Keeping with Media Molecule's "Play Create Share" ethos, the community can pull other peoples' creations into their own dreams, from elements like trees up to fully realized games. You interact with the malleable world using Imp, who is possibly the most adorable cursor ever. Players push, pull, stretch, and deform simple shapes into whatever the user is trying to achieve.

That freeform approach to creation has led the team to reevaluate how they interact with their own game as they try to imagine how players will approach *Dreams*. "[W]e're having to unlearn all those professional ways of doing things and kind of adopt...or do almost the obvious thing sometimes," says technical director David Smith. "The thing that a child would say well, 'Of course. The way you make a char-

acter is you just do this, and you grab it and do that, and you animate it and that's how it works.' So we try in a simple way to make that just work."

Dreams is being built around a playful creation experience, where errors and mistakes can turn into new avenues for creativity. Take animation, for example. "The flow normally is you animate something, you f--- something up, say 'Never mind, I'll fix it in post,' says technical director and co-founder Alex Evans. "I'll go and move keyframes around.' You can do that in *Dreams*, but the much cooler thing is if you mess up, you just undo and do it again. So in sculpting, you go, 'Oh, I didn't mean to go that way. Undo. Oh, that's

better now.' And you just do it three or four times and as a result it feels like you're mastering something. It's more game-like rather than like, 'Uh, I just have to go in and pull the basic curve around.'"

Media Molecule is still being quiet about the underpinnings of how it all actually works; right now, the studio is focusing on the user-created elements. We still have much to learn about how players can string together individual components to make their own games or jump from dream to dream. The team has a track record of giving players powerful creation tools without overwhelming them, and we're optimistic that they'll be able to pull it off again with *Dreams*, too. » **Jeff Cork**

» **Platform**
PlayStation 4

» **Style**
1-Player Action
(Multiplayer TBD)

» **Publisher**
Sony Computer
Entertainment

» **Developer**
Media Molecule

» **Release**
2016

Dreams has a striking watercolor aesthetic





Horizon: Zero Dawn

Action on the surface, RPG underneath

» **Platform**
PlayStation 4

» **Style**
1-Player Action/
Role-Playing

» **Publisher**
Sony Computer
Entertainment

» **Developer**
Guerrilla Games

» **Release**
2016

Guerrilla recently showed off more of its ambitious open-world game, which stars a young woman named Aloy as she wanders through a post-apocalyptic wilderness 1,000 years in the future. Humanity has returned to tribalism, and massive mechanical creatures roam freely across the land. The original E3 demo for Horizon focused on the action elements, which seemed like a logical fit for the creators of the Killzone games. This more recent look at some of the same gameplay sequences reveals that Horizon has deeper RPG roots than first imagined.

The work-in-progress HUD is minimal, but the presence of a compass with quest markers recalls similar systems in other open-world RPGs like Fallout 4. We also see a small onscreen meter that indicates XP gains and progress toward a new level. While the fighting is focused on speed and tactical approaches to targets, Guerrilla pointed out floating damage value numbers popping up after scoring a hit – a mainstay of RPG-style combat

as a way to show off growing power and damage over time.

Beyond the classic trappings of RPG interactions, Guerrilla also alluded to quests that would see Aloy retrieving items for multiple quest givers from the various tribes in the world. Players can also freely wander to various locales, including deserts, snowy mountains, ancient overgrown human cities, mountaintops, and fertile valley forests. We've only had a close look at the latter of those environments so far, but the level of detail and beauty on display in that small space is impressive.

While Guerrilla is keen to communicate the role-playing potential of Horizon, the demo makes it clear that taut action is still paramount for moment-to-moment gameplay. Stealth allows you to approach enemies for quick takedowns, or to set up explosive traps. The mechanical creatures often employ herd behaviors, which you can exploit to drive them into snares. While the smaller mechanical beasts are intriguing, nothing sells Horizon's potential like

the appearance of the Thunderjaw. This massive 24-meter long T-Rex-like machine has more than 90 destructible armor plates, on-board launchers that can be shot off and turned against it, and weak points that can be uncovered and targeted. The fight against this creature proves out the potential for great boss battles, presuming that same complexity shows up from other large foes.

Horizon continues to impress with both its gameplay and visuals, but I was disappointed that this latest glimpse showed off the same small valley area, and much the same conflicts that were shown behind closed doors back at E3. Guerrilla has made some big promises about a vast open world, various social groups and quest givers, and a deep story, but we're forced to take the developer at its word for the time being. In the meantime, if this returning demo really is a microcosm of a much larger experience, Guerrilla's new project could shape into one of the most thrilling debuts on the horizon. » **Matt Miller**



Detroit: Become Human

Picking up where Kara left off

In 2012, even before Quantic Dream announced *Beyond: Two Souls*, the studio revealed a tech demo called “Kara.” The short film depicts a female android being assembled in a factory, but because she has a sense of awareness and identity, she is deemed defective. Protocol dictates that non-standard models get scrapped, but the quality-assurance tester shows compassion when Kara expresses fear about her impending death. She is packaged and shipped to the outside world, and that is the end of the story – or at least it was.

Detroit: Become Human is the continuation of Kara’s journey. Quantic Dream unveiled the new project during Sony’s recent stage presentation at Paris Games Week, along with the involvement of actress Valorie Curry (*The Following*, *Veronica Mars*), who served as Kara’s model and voice for the original demo that serves as the starting point for this ambitious new game. “[The demo] was a very exciting piece for us,” says director David Cage in a promotional video released by Sony. “But it left me a little frustrated, because I wanted to know what would happen to this character when she leaves the factory and what she would think of it. This is how *Detroit* started.”

The city of Detroit may seem like a strange setting for a futuristic game. In the real world, Detroit is facing financial, social, and industrial hardship; haunting online image galleries show the city’s ruined schools, libraries, and homes being reclaimed by nature. However, when Quantic Dream visited the city, those things didn’t dominate the team’s impression. “Yes, we’ve seen the abandoned churches and the abandoned places,” Cage says. “But at the same time we saw fantastic places. We met fantastic people, and we could

really feel the energy that was there. That was inspiring.”

In the game, *Detroit* has become the center of a new android manufacturing industry. Androids are a regular part of everyday life, and most of them are content to perform the tasks for which they were created. However, their integration isn’t universally smooth; some citizens stage protests, upset that androids are stealing jobs that humans could be doing. Kara explores this complicated world, existing in a gray area of identity; she isn’t an automaton, but she also isn’t a real person.

Despite the android elements, *Detroit: Become Human* isn’t necessarily about the wild technology that might exist in the future. “We didn’t want to do sci-fi,” Cage says. Instead, the game uses the concepts as a backdrop as Kara learns what it means to be human.

How exactly players explore the existential quandary has not been revealed. Beyond the setting and premise,

Quantic Dream has not divulged many gameplay details about *Detroit: Become Human*. As with the studio’s past titles like *Heavy Rain* and *Beyond: Two Souls*, player choice plays a major role in the narrative. “I think there are some common points with what we’ve done in the past,” Cage says. “It’s based on storytelling. It’s based on emotion, and the emotional involvement of the player. But the game has its own voice and it’s really a different experience from *Beyond* and *Heavy Rain* in many, many ways.”

Quantic Dream’s PS3 projects were among the most visually amazing experiences of the last generation. With the PS4 hardware, plus a new 3D engine, the team hopes to build an even more realistic world – and create even deeper connections. People were already attached to Kara after watching a brief tech demo, so imagine what could happen over the course of an entire game. » **Joe Juba**

» **Platform**
PlayStation 4

» **Style**
1-Player Adventure

» **Publisher**
Sony Computer Entertainment

» **Developer**
Quantic Dream

» **Release**
TBA



Valorie Curry reprises her role as a self-aware android



Ark: Survival Evolved

Castaway on a dinosaur island

» **Platform**
PlayStation 4
Xbox One • PC

» **Style**
Online
Multiplayer Action

» **Publisher**
Studio Wildcard

» **Developer**
Studio Wildcard

» **Release**
June

The success of DayZ has spurred numerous multiplayer-focused survival games in recent years, all clamoring for the attention of PC players. Despite still being in Steam's Early Access program, Ark: Survival Evolved has emerged as a clear favorite thanks to its deep progression and crafting options – not to mention a heaping helping of dinosaurs. Xbox One owners can soon live out their *Jurassic Park* fantasies (or nightmares) when Ark enters Microsoft's Xbox Game Preview program this December.

While Ark sports some sci-fi trappings, your early hours are firmly rooted in the Stone Age. After choosing a server and customizing a character, you wake up in your undies at a random location on the massive, 48-square-kilometer island. Fending off death is an immediate concern, requiring you to manage a number of factors including your health, stamina, hunger, thirst, and temperature.

Survival focuses primarily on collection, crafting, and combat. Rocks, plants, and trees provide the building blocks for your first rudimentary tools, which speed up resource gathering and prepare you for battle. Every action you perform – including just staying alive – earns you XP, which you use to level up and acquire new crafting blueprints, called engrams. These crafting options are immense, covering everything from basic tools and clothing to an assortment of guns and electronics, all of which help stave off death.

Death is everywhere. Ark currently features over 50 different breeds of dinosaurs and creatures, a mixture of passive herbivores, aggressive carnivores, and omnivores that may or may not consider you an appropriate meal. You also have to contend with

other players who are just as likely kill you and steal your belongings as ask you to join their tribe (rest assured, you can play alone or on more-friendly PvE servers if you choose). Thankfully, dying doesn't reset your level or the engrams you've acquired. Instead, you lose the items you were currently carrying, but have a chance to retrieve them if you make it back to your corpse in time.

Once you progress beyond worrying about your immediate survival, a wealth of gameplay avenues open up. You can make your own base complete with traps and turrets, set up your own farm plots (pro tip: dino dung makes for a great fertilizer!), and even tame dinosaurs. Creatures like the mammoth and Stegosaurus can be trained to gather wood, berries, and other resources, while others like the Pteranodon and Triceratops can be saddled up and ridden. Some animals feature more unique abilities. Monkeys can pick locks, allowing you

to throw a simian pal over the wall of an enemy's base to open the door for you. A Gigantopithecus (i.e., Bigfoot), on the other hand, can throw you over the wall instead. You can even build an entire fort on the back of a roaming Brontosaurus.

Studio Wildcard says Ark will have almost 100 different species at launch in June, forming a complex predator-prey hierarchy within the ecosystem – where you end up on the food chain depends on you. Crafting options will also continue to expand up to and beyond launch, complete with futuristic sci-fi weapons. Those features won't be available when Ark enters Microsoft's Xbox Game Preview program, but Studio Wildcard says PC, Xbox One, and PlayStation 4 versions will have complete parity at launch, and be augmented by future expansions. Not that more content is really necessary: You can already ride a Tyrannosaurus rex – what more could you possibly want? » **Jeff Marchiafava**



Players can lessen the grind by tweaking world variables on their own local server



Diablo III: Reaper Of Souls

A huge patch looms

Diablo III: Reaper of Souls is getting a terrifying amount of new content thanks to an upcoming patch. While Frank Pearce told Game Informer at BlizzCon that a new expansion for Diablo III isn't in the works right now, patch 2.4 boasts so much content that it could almost be considered an expansion of its own.

The patch provides an all-new zone (Greyhollow Island), along with new bounties, a truckload of new legendary items, and new side areas. While the nemesis system from the console versions isn't moving over to PC yet, the massacre system is making that jump. The list of other additions goes on and on, including more stash space

and more Kanai's cube recipes.

Blizzard is making 24 new set dungeons – special challenges that can only be accessed with a six-piece set and knowledge of the dungeon's location. Players can find set dungeons by heading to Leoric's Library in the new Royal Quarters area underneath Leoric's Manor and doing some light reading. While there, you may also come across interesting bits of story and lore.

Diablo III: Reaper of Souls gave Diablo III a much-needed second shot at life, and post-launch content has continued to provide a stellar experience. Patch 2.4 looks perfect to continue all the monster-mashing and loot-collecting that we know and love. » **Daniel Tack**

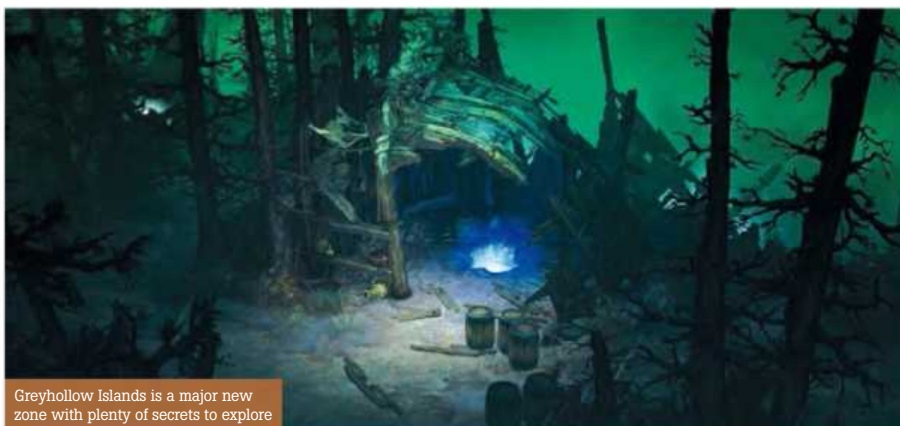
» **Platform**
PlayStation 4
Xbox One • PC

» **Style**
1-Player Action/
Role-Playing
(4-Player Online)

» **Publisher**
Blizzard Entertainment

» **Developer**
Blizzard Entertainment

» **Release**
Early 2016



Greyhollow Islands is a major new zone with plenty of secrets to explore

FEARTM THE WALKING DEAD

THE COMPLETE FIRST SEASON

amc



"scary in all the right ways."

— MTV

RETURNS
2016

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gameinformer
GAME OF THE MONTH

87 Rise Of The Tomb Raider

Crystal Dynamics' rebooted Tomb Raider series gets even better. In this adrenaline-filled sequel, Lara Croft battles the harsh Siberian wilderness and dangerous enemies while searching for the secret to immortality. Offering a bigger world, more varied combat, and plenty of intense action sequences, this entry improves on its predecessor in every way. Stepping into Lara's shoes has never been more exciting.

THE SCORING SYSTEM

10	Outstanding. A truly elite title that is nearly perfect in every way. This score is given out rarely and indicates a game that cannot be missed.	5	Flawed. It may be obvious that the game has lots of potential, but its most engaging features could be undeniably flawed or not integrated into the experience.
9	Superb. Just shy of gaming nirvana, this score is a high recommendation because the game reviewed is head-and-shoulders above its competition.	4	Bad. While some things work as planned, the majority of this title either malfunctions or it is so dull that the game falls short as a whole.
8	Very Good. Innovative, but perhaps not the right choice for everyone. This score indicates that there are many good things to be had, but arguably so.	3	Painful. If there is anything that's redeeming in a game of this caliber, it's buried beneath agonizing gameplay and uneven execution in its features or theme.
7	Average. The game's features may work, but are nothing that even casual players haven't seen before. A decent game from beginning to end.	2	Broken. Basically unplayable. This game is so insufficient in execution that any value would be derived in extremely small quantities, if at all.
6	Limited Appeal. Although there may be fans of games receiving this score, many will be left yearning for a more rewarding game experience.	1	Shaun.

AWARDS

 PLATINUM	Awarded to games that score between 9.75 and 10
 GOLD	Awarded to games that score between 9 and 9.5
 SILVER	Awarded to games that score between 8.5 and 8.75
 GAME OF THE MONTH	The award for the most outstanding game in the issue

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Fallout 4

A familiar wasteland

9



Style 1-Player Action/Role-Playing **Publisher** Bethesda Softworks
Developer Bethesda Game Studios **Release** November 10 **Rating** M

PS4 • Xbox One • PC

» Concept

A straightforward sequel with improved combat and a denser world to explore

» Graphics

The visuals can be simultaneously breathtaking and ugly. The vistas and lighting are beautifully created, but some of the texture work is muddled and steals some of the finer details

» Sound

From the powerful Fallout 4 theme to radio stations filled with classic tunes, the score is brilliant. Most of the voice work (especially the protagonists') is equally good

» Playability

Gunplay is vastly improved, making the act of exploring the wasteland more enjoyable. Better yet, I didn't run into too many glitches in my playthrough

» Entertainment

Bethesda has created another game you can lose your life in. The quests just keep coming, and you always have another perk to unlock

» Replay Value

High

My lone wanderer from Vault 111 is as much a stranger in a strange land as he is a person returning to the familiarity of his home. His crisis of identifying with the world echoes my journey through Fallout 4, a game that is as new and exciting as it is old and familiar.

Roughly seven years have passed since Bethesda Game Studios ventured into Fallout's wasteland, but you'd think the development team never left it, as Fallout 4 feels like a well-worn Pip-Boy. The studio clings to many of the great (and not-so-great) gameplay trappings and overarching designs that made Fallout 3 such a captivating release. The wealth of identifiable content is used as the backbone of this sequel – sometimes to a fault – but all in support of making the act of wandering the Commonwealth Wasteland one of the most rewarding (and time-consuming) experiences in gaming.

Fallout 4 doesn't roar out of the gate with guns blazing. As much as I enjoyed seeing the world prior to the bombs falling in Fallout 4's opening moments, Bethesda rushes through this event. The player is given barely enough time to take a snapshot of it, let alone develop a meaningful connection with the family members who are supposed to be the central hook of the narrative. The subsequent descent into the vault doesn't fare much better, and is used mostly to establish an antagonist. The studio clearly wanted to get the player into the wasteland as quickly as possible, but it hurts the story in the process.

The wanderer (who can be male or female) comes into his own when he becomes a conduit for your choices, and ends up being more than a blank slate this time around. The new spoken dialogue fleshes this protagonist out, much like Mass Effect's Commander Shepard. I connected with my character's actions, but was fascinated by his choice of words and tone, which are not spelled out in the streamlined (and improved) dialogue tree.

The main campaign offers some surprising twists and turns, but a lot of the story mirrors events from Fallout 3, and ends up falling flat despite the huge world-changing events afoot. The real points of interest come from how you can toy with and poke at the different factions.



I didn't think Boston would be a great fit for an open world (especially after soaking in the iconic sights of Washington, D.C.), but it proves to be a treasure trove of unexpected discoveries, gorgeous vistas, and (most importantly) valuable loot. Even after getting hit with nukes, the world is surprisingly colorful and inviting. Bethesda clearly establishes the vision of a world repairing itself.

One of the new gameplay wrinkles in Fallout 4 ties into the healing of the land. An early mission pushes the player to help revitalize a settlement, but this act is handled poorly since the building tools are not clearly communicated. I've always been in favor of less hand-holding, but Bethesda clearly needed more here. The settlement aspect is purely optional, but has a nice hook to it, giving you a satisfying sense of developing a society (much like Bethesda's mobile Fallout Shelter title). I wanted to grow the settlements as big as I could.

The central story plays second fiddle to picking a direction and wandering until you are forced to put the controller down. Unearthing the secrets of this dangerous land is far more enticing than making progress in the main story threads (of which there are many). The side content is where Fallout 4 is at its strongest.

I enjoyed nearly every mission, even though a good number of them followed the same formula. The variety of enemy types and environments is nice, but long loads occur when entering enclosed spaces, and

the map for these areas is a nearly unusable mess.

The most improved element of Fallout 4 is the gunplay. It doesn't offer the finesse of a Destiny or Call of Duty, but it feels good, and turned running and gunning into my preferred method of play. I used V.A.T.S. mostly for strategic reasons, such as identifying target locations. The biggest problems tied to combat come from the technical performance; framerate stutters and dips are fairly common in larger firefights.

Players don't have to wield the arsenal that is given to them. Weapon crafting is immensely satisfying and easy to understand, but it comes at the expense of crafting the character you want, as perks are required to truly maximize the depth of this endeavor. The perks are an area where Fallout 4 makes a big step forward in making leveling up exciting and meaningful, but a huge step back in that you can't really make the character you desire if you want to see some of the game's most interesting elements.

Fallout 4 didn't blow me away like the previous iteration did, but it did keep me fully vested in journeying across the wasteland. As Bethesda's "Welcome Home" marketing campaign teases, when fans of Fallout 3 enter this new world, it'll feel strangely familiar. As one of the top games of the previous generation, this isn't a bad thing at all. Fallout 4 has all of the trappings to keep you engaged for days on end. » **Andrew Reiner**

Star Wars Battlefront

A little short for a Stormtrooper

Style 1 or 2-Player Shooter (40-Player Online) **Publisher** Electronic Arts **Developer** DICE **Release** November 17 **Rating** M

The Death Star hangs ominously over a war erupting on the forest moon of Endor. A cacophony of laser fire lights up the darkened tree canopy, drowned out by the clanking of an Imperial AT-ST on the march. The walker is clearing a path to a hidden Rebel base deep within the forest. If this stronghold falls, the war is over. The Rebels are outgunned and seconds away from defeat when Luke Skywalker's iconic green lightsaber ignites and he springs to action. Luke bats away Stormtroopers like flies, chops down the AT-ST, and the Rebels suddenly have momentum again. The tide of war has shifted to their advantage.

Almost every conflict in Star Wars Battlefront unfolds with this level of intensity and drama – moments that often parallel the excitement from George Lucas' original trilogy of Star Wars films. From the large scale of the battles to spot-on animation of the AT-STs, DICE has created the most authentic Star Wars video game experience to date.

The thrill of piloting an X-Wing fighter or soaring through the air as Boba Fett doesn't last forever. Once the magic of stepping into the movies wears off, Star Wars Battlefront doesn't give the player much to fight for. For developer DICE, the seasoned studio behind the long-running Battlefield series, Star Wars Battlefront is surprisingly light on maps, weapons, and progression systems. The feeling of extreme repetition sinks in early, and outside of enjoying the minute-to-minute Star Wars warfare, hardly any of the unlockables deliver a compelling

reason to invest more time. You're just hopping from match to match, recycling the same tactics and seizing the same points.

Designed primarily as a multiplayer shooter, Star Wars Battlefront offers nine modes, ranging from large-scale 40-player wars to intimate 8-player firefights. Each avenue of play unfolds in maps set across four locations: Hoth, Endor, Tatooine, and the lesser-known Sullust. The best parts of the experience unfold in just two modes: Supremacy, a war over controlling territories, and Walker Assault, a game of attack and defend featuring enormous and heavily armored AT-ATs. The other modes don't capture the epic scale of war; they are primarily palate-cleansers, yet fun in the smaller challenges they bring.

All of the maps in each mode are well designed, allotting wide-open terrain for vehicles to take to the skies, and plenty of enclosed spaces for heated firefights to erupt. Plus, all of your time on the battlefield is rewarding. Running and gunning with a standard Imperial blaster is surprisingly satisfying, while dogfighting in an X-Wing demands skill and precision. The best parts are the rare occasions when you get to control a hero or villain like Han Solo or Darth Vader. These characters are difficult to take down, and can rack up kills quickly. The different gameplay avenues control admirably, and are sewn seamlessly into the conflicts.

Some of my top moments of the year are from Battlefront's multiplayer. Knocking Boba Fett out of the sky with a prayer of a rocket blast, racking up over 30 kills from the cockpit of an

AT-AT, and just watching green and red laser fire rip across the battlefield are just a few of the "wow" moments.

As fun as these iconic scenes are, they aren't enough to provide a sense of progression over extended play. For example, my favorite weapon is the Imperial blaster that you get at the outset. The other weapon unlocks (of which there are only 16) aren't as satisfying to wield, and the ones that pack a punch are limited since they must cool down between uses. The character-specific unlocks are laughably bad; who wants to be a stormtrooper without a helmet?

All across the board, DICE favors simplicity, making Battlefront more of a casual experience than the meaty, class-driven competitive shooter the developer is known for. This approach isn't necessarily wrong, since it allows everyone to jump in and enjoy great Star Wars battles, but the lack of variety limited the time I wanted to spend in my favorite universe.

By no means should Battlefront be considered for its single-player or cooperative play. Both avenues are supported with bare-bones survival and battle modes – neither of which comes close to replicating the large-scale conflicts of the multiplayer component and end up having awkward lulls in the action.

DICE succeeded in creating a Star Wars experience I always wanted to see, but it didn't hold my interest as a gamer long. I plan to revisit Battlefront often, but not for extended periods of time. Forthcoming DLC could certainly change this approach, but for the time being, the thrills are extremely limited.

» **Andrew Reiner**

7.5

PS4 • Xbox One • PC

» **Concept**

A multiplayer-focused shooter that homes in on the authenticity of Star Wars, but comes up short in content

» **Graphics**

Easily the best-looking game of this console generation so far. All of the details from the feature films are lovingly recreated, and include the tiniest of details, right down to scuffmarks on the X-Wings

» **Sound**

I couldn't help but smile when "The Imperial March" kicked in as the Empire seized a control point. John Williams' score is used brilliantly, and DICE's expertise in the sounds of war turns Star Wars' iconic effects into an aural tour de force

» **Playability**

All of the characters and vehicles control exceptionally well. There isn't a bad way to play this game. Unfortunately, character progression and weapon depth are lacking

» **Entertainment**

Star Wars' battles have never looked or played this well, but the thrills grow repetitive quickly

» **Replay Value**

Moderately High

The Season Pass

Star Wars Battlefront is light on content out of the gate, but a season pass promises to reinforce the number of maps, characters, and gear that players can dive into as the DLC rolls out at unspecified dates in the future. The season pass more than doubles the number of maps offered (from 12 to 28), and adds four new heroes, along with a wealth of much needed gear. Given the sparse content available at launch, I can't help but feel a little cheated by this approach.



Need For Speed

Back to the drawing board

7

Style 1-Player Racing (8-Player Online) Publisher Electronic Arts Developer Ghost Games Release November 3 Rating T

PS4 • Xbox One

» Concept

Restart the series with the basic beats of street racing, drifting, and car customization

» Graphics

Sometimes the live-action cutscenes bleed into in-game assets seamlessly, and other times you're just as surprised when a building pops into place while you're racing

» Sound

The constant phone calls you get from your friends – even in the middle of a race – is annoying

» Playability

The catch-up A.I. is obnoxious even for an arcade racing title

» Entertainment

Blazing through the night provides some fun racing moments, but NFS doesn't support or assemble its constituent parts to any cumulative positive

» Replay Value

Moderately High

Need for Speed was once an annual franchise, and each installment catered to slightly different audiences. Some focused on cops versus racers, while others leaned toward sim racing or accentuated their storytelling. This year's entry – a self-proclaimed reboot – ostensibly resets the franchise so it can redefine itself. The problem is, this game does not represent what the franchise is all about. It has aspects we've come to know and love from the series, such as cops, cars, a city, and even a story, but none of them stand out as a focal point or is elevated to a level of excellence.

The open-world format is nothing new for this series, and Ventura Bay isn't an alluring place to race through. Plenty of real estate covers the usual downtown, country, and industrial locales, but none of it stands out from a visual or layout sense from the many cities we've raced through before. Certainly, the hills are where you find lots of good switchbacks for drift racing, but when you cover a lot of the same ground through multiple events, even a good run wears out its welcome. Thus, a relatively big map feels smaller than it should.

NFS offers plenty of events and its share of high-speed thrills, but the geography of the city itself is relatively tame. Titles like *Burnout Paradise* and *Need for Speed Most Wanted* (both by developer Criterion) teemed with jumps and billboards to crash through, daring you to wonder what you could do with a fast car. Ventura Bay, on the other hand, does not provoke your imagination. It has some shortcuts, a few unexciting collectibles to find, and even some small jumps, but I was neither excited by nor significantly rewarded for exploring the city – a negative for an open world.

The game automatically populates Ventura Bay with other online players (including A.I. drivers), whom you can challenge to sprint, drift, or over-run races. You can also get together with them in crews to tackle events for extra rep, but NFS doesn't have a cohesive world that you want to explore with others. There are no speed cams to blow past with friends, jumps to see whom can fly through the air the farthest, or even multi-player games like capture the flag or tag. Even when your friend is racing events, they appear to be racing all



alone in your version of the world.

NFS requires an online connection to play, even if you choose to play privately without any outside players populating your world. This can be important since the game is unplayable if your network connection drops or the servers are on the fritz. In my play time I had two instances where my progress wasn't properly saved after I was dropped from the game. One time it didn't save an event I already completed, and the other it skipped forward past a cutscene I was about to enter.

Fun is further sucked out of the world by the fact that the cops in Ventura Bay are inconsequential. They patrol the streets, but they aren't hard to shake once a chase begins – especially as you upgrade the HP on your cars – and they don't bring a lot of might to bear. I like when they join an event in progress, but they're not integrated to the point of making a difference when you're racing. You can just ignore them as you go about your business. Sometimes they can be just as oblivious, not bothering to chase you after an event ends.

Even though the cops will rarely get you, the races themselves are plagued by acute catch-up A.I. opponents whose absolute lack of subtlety mar the experience. I expect that to a point in an arcade racer, but it's discouraging to know the race only matters in the last five checkpoints. Moreover, some pack drift races are hard to race since you only score points when drifting around other cars. This can be hard to do when the catch-up A.I. is rubber-banding cars ahead and behind you, making it

hard to maintain your drift speed and groove. It's a shame, because in classic Need for Speed style, the game has a good sense of speed and has some exciting moments when you don't know if you're going to live or die, but either way you're doing it at full speed.

The story is as inconsequential as you'd expect, but I'll give developer Ghost Games this: At least the team totally went for it with the live-action cutscenes, actors, and dialogue. I found them cringe-worthy, but the actors embraced their characters' clichés with fervor. Worse, however, is how the story and the characters interrupt you in the middle of races, constantly calling you on the phone to repeat often meaningless messages even though a menu archive stores all the info.

One area where I feel like the game achieved its intention was in the customization options. Although you can't share vinyl creations, you can deck out your cars in numerous ways, from the gaudy to the understated. On the performance side, I often switched around my setup when I needed more drift performance versus grip via a simple master slider. I also like how some more granular control setups (like brakes, for instance) are only accessible once you buy a particular part.

When you reboot a franchise, it's done with the tacit understanding that it needs to move to a better space. Need for Speed checks off the boxes for the series, but unfortunately it's not a reevaluation that necessarily improves on what's already come before. » **Matthew Kato**

Rise Of The Tomb Raider

Leaping to new heights



Style 1-Player Action **Publisher** Square Enix
Developer Crystal Dynamics **Release** November 10 **Rating** M

9.5

Xbox One • Xbox 360

» Concept

Put Lara on a dangerous quest to discover the secret to immortality before it falls into the wrong hands

» Graphics

The visuals are stunning, with detailed backdrops and realistic animations. I only encountered a few framerate hiccups

» Sound

Sound effects, music, and voice acting are all top-notch, keeping you right in the moment

» Playability

The basics are easy to grasp, and the game does a great job of providing reminders about certain abilities to use at the right times

» Entertainment

Whether you're facing off against giant bears or making a risky jump, Rise of the Tomb Raider is an adrenaline rush

» Replay Value

High

Crystal Dynamics set a solid foundation when it rebooted the revered Tomb Raider series back in 2013. With a bigger world, more varied combat, and more high-octane action, Rise of the Tomb Raider is better than its predecessor in every way. Just as Lara remains determined to keep moving forward, so does Crystal Dynamics with the franchise.

The most exciting parts of Tomb Raider occur as Lara makes her way through harrowing situations, and the stakes have only been increased since the last entry. Expect plenty of close calls, death-defying leaps, and exciting escape sequences; I often felt like I was just escaping by the skin of my teeth. Rise of the Tomb Raider features a quasi-open world that's split between hubs in which Lara is surrounded by resources for crafting along with hidden caves and tombs to explore. She must platform, solve puzzles, and break through obstacles to navigate them. Siberia's brutal, snowy landscapes are great venues to test your survival instincts, offering high points to climb and dangerous wildlife to fend off.

The excitement of exploring tombs is one of this sequel's major improvements. They are much more expansive than caves, usually featuring one big puzzle, where you use Lara's tools to eliminate obstacles, and platform using her pickaxe to land big jumps. For example, one tomb

was flooded and had me using Lara's rope arrow to get a boat around and find ways to drain the water. The puzzles are deep, requiring you to pay attention to things like water levels and timing your jumps to reach moving platforms.

The action excels just as much as the exploration and puzzle-solving. Just when you think it can't get any crazier, it does. I reveled in reacting on the fly, whether it was taking out a swarm of enemies or racing to flee a collapsing tomb. Combat is more strategic now, providing even more ways to tackle every situation. Sometimes you can plot and sneak up on enemies for surprise attacks, and other times they come charging in at you, forcing you to react in the moment. I loved using a stealthy approach, but throwing molotov cocktails or firing an arrow to land a perfect headshot were just as entertaining. Unfortunately, later sequences often feel like Lara versus the world, and get repetitive as you're eliminating wave after wave of enemies.

When you're not in the adrenaline-inducing moments, you're searching for supplies and secrets. The world is large and littered with cool collectibles and hidden tombs. Finding documents and murals show points of the interest on the map, but the lack of a minimap is unfortunate since it forces you to pause to check the map. Still, I loved stumbling upon

weapon upgrades and collecting resources to craft new gear. That's where Rise of the Tomb Raider excels; you progress by finding a new item or getting a new tool that suddenly changes how you traverse the world. Similar to the fun of Metroid, returning to previously explored areas opens up new secrets with new goodies to track down.

The expansive world and depth of exploration is the real draw of Rise of the Tomb Raider, but the story also provides some interesting threads. Lara studies her late father's research, determined to prove the secret to immortality is out there. The story is predictable, but has memorable moments, especially as it reveals more about her relationship with her father and the evil organization called Trinity. I won't spoil anything, but the last scenes make me excited to see where Crystal Dynamics takes the narrative next.

Rise of the Tomb Raider captures the thrill of being an adventurer and leaves you thinking about Lara's next move. You have daredevil sequences, heroic moments, fun exploration, and exciting fights that even Indiana Jones would envy. If Crystal Dynamics keeps raising the bar from here, I can't wait to see what's in store for Lara.

» **Kimberly Wallace**

This review pertains to the Xbox One version. It is also available on the Xbox 360



Microtransactions?

You can replay certain areas and tombs by choosing the expeditions option on the title screen. By using coins you earn in the game or using real money, you can purchase cosmetic perks that can add funny details and challenges. However, this whole mode is ancillary and the transactions aren't intrusive, so they don't impact the fantastic core experience.



Bloodborne: The Old Hunters

Greater challenges, darker dreams

9.25



Style 1-Player Action/Role-Playing **Publisher** Sony Computer Entertainment
Developer From Software **Release** November 24 **Rating** T

PS4

» Concept

New areas, bosses, and equipment await players who want to continue unraveling the mysteries of Bloodborne

» Graphics

Environments take the player deeper into nightmares, and familiar elements get new twists

» Sound

Epic boss music and cryptic, cackling dialogue from a number of new characters bring the world to life

» Playability

Content is tuned to be much more difficult than anything in the base game, so players should familiarize themselves with old content before pushing forward

» Entertainment

An essential add-on to the core game, offering significant challenges and new ways to play the game through weapons and other goodies to suit all playstyles

» Replay Value

High

I spent the better part of an evening running up against Hidetaka Miyazaki's vision of *The Shadow Over Innsmouth* and came up empty. Defeated. I had the boss near death before my massive whirligig sawblade and Gatling gun crumbled under the weight of attrition and my own frayed nerves.

I woke fresh and took one more attempt at the hideous creature, and won. Experiences where one stares down the impossible and emerges victorious define the blood-drenched world of Bloodborne. The surge of elation experienced in these situations is the rarest of all gaming wonders, and this sense of victory is pronounced in *The Old Hunters* expansion, which features the most challenging areas and encounters available in From Software's whole catalog – including the Souls series.

The *Old Hunters* contains a grab bag of new areas, NPCs, weapons, armor, bosses, items, and creepy creatures. You can theoretically dive into the expansion content around 30 percent into the core game, but I highly recommend taking a character ready for the original final battle into the new Hunter's Nightmare location. The *Old Hunters* holds nothing back; the boss encounters, outside of the first, are all significantly more challenging than anything found in the base game (with the possible exception of deep Chalice Dungeons). The massive ramp-up in difficulty is appreciated and enjoyable, and is clearly designed for players looking to take on creatures that would give even the most terrifying nightmare denizens of Yharnam pause.

My favorite boss in *The Old Hunters* is an epic take on the "hunter versus hunter" battle that serves as the final encounter of the base game; it's sure to get your palms sweaty and your character bloody. If you were wondering where the Moonlight Greatsword (From Software's signature Easter egg) has been hiding all this time in Bloodborne, have no fear: You face off against a boss who wields it for your chance to gain the glowing green blade.

The boss fights aren't the only difficult encounters. The enemy encounters and traps can end a high-level player in mere moments. In all my years of gaming I've never seen hospital equipment swung so hard or so violently (you'll know it when you see it).

The Hunter's Nightmare starts off as a surreal take on areas you've probably already explored in the core game, but with much more difficult enemies and warped changes in the scenery. Rivers of blood flow, and deadly hunters wielding new weaponry lurk around every corner. The deeper one goes into the nightmare, the more interesting things get. The horrifying research laboratory could teach any survival-horror game valuable lessons, an awe-inspiring clocktower provides an amazing boss backdrop, and the sights and sounds of an overrun fishing village bring terror to life. Progress through the expansion content is linear, with few diversions available to inquisitive players, though that didn't dull my enjoyment of the experience.

Plenty of new armaments help you on your journey, and while you can

still experiment with blades, saws, and clubs, the new tools support other play styles – especially magic users. Whether you're using gleaming new appendages from long-lost memories, blasting meteors from your eyeballs, or simply opting to use a bow or shield, players of all types have plenty of new options.

An important addition is coming to all Bloodborne owners alongside the *Old Hunters*, especially for those who like to play offline or by themselves. Players tackling the new content (and the old content) now have the option to summon NPC hunters to help. Members of this oddball league can be called in for one point of insight, similar to how summoning other people works in multiplayer. These hunters are often conveniently located outside of boss rooms (sometimes only when certain conditions are met). Many of the new bosses come with abilities that unfortunately end your A.I. companion's life about halfway through the fight, so while using them can take some initial pressure off, the end task during the harrowing moments still fall to you. These companions are useful attention-grabbers for core game content, but don't count on them to do much for you against the expansion's horrors.

The *Old Hunters* has questions, answers, and some glorious new secrets to be uncovered. If you have already experienced Bloodborne, this add-on is essential. If you haven't, it's the perfect time to join the *Old Hunters* and journey through the streets of Yharnam and the new nightmares that follow. » **Daniel Tack**

StarCraft II: Legacy Of The Void

Blizzard's RTS legacy lives on



Style 1-Player Strategy (12-Player Online) **Publisher** Blizzard Entertainment
Developer Blizzard Entertainment **Release** November 10 **Rating** T

8.75

The real-time strategy genre, once proud king of the PC gaming sphere, has all but been laid low over the past decade, infiltrated and co-opted by the multiplayer-online battle arena. StarCraft has defied the MOBA uprising, keeping the resource-gathering and action-per-minute metrics relevant and respected within the gaming galaxy. Five long years since the release of Wings of Liberty, the StarCraft II story comes to an end with Legacy of the Void, resolving the fate of many beloved characters and bringing some old faces out to play once more.

The core real-time strategy mechanics are familiar and fun (especially for those who played the last two installments), but the gameplay still has its ups and downs. The missions structured around heroes and personalities are far more interesting than the missions that boil down to building up and destroying objectives, and the “defend the thing in the middle of the map” crutch wears out its welcome as you progress. These missions feel like a chore defending, getting to supply cap, and spamming cannons and defensive structures as you protect the objective. A handful of compelling maps break things out from the traditional real-time strategy confines and play with the rules, but they’re plucked back out of the stars by the reliance on almost back-to-back, last-stand defense arenas.

The “dungeon dives” sprinkled throughout the campaign allow players to get into the hero pilot seat and control key story characters with special skillsets, and they’re much more entertaining. However, the customization options in Legacy of the Void do a lot to make the core campaign maps fun, and I had a blast mixing and matching different faction unit styles. The player begins only being able to pick from Nezarim and Aiur in each army slot, but significantly different options are available about halfway through the campaign. I was a huge fan of the Tal’darim, especially the Destroyers – modified Void Rays that come with a chaining laser weapon. The Spear of Adun, the protoss super-ship and your mobile home base, is also a key customizable aspect of the campaign, and allows the player to allocate solarite (collected from completing side objectives in each map) to obtain both passive bonuses

and extremely powerful activated abilities. Together these two methods of customization deliver on bringing enjoyment to even the most trivial of campaign stages.

There’s nothing wrong with a campy sprawling space opera, and we finally get many of the answers to questions we’ve been pondering since Wings of Liberty. Sadly, things don’t come together as well as they could. The story is at odds with itself: a by-the-book, sci-fi narrative that has trouble explaining some of the more esoteric plot points as they develop. It’s a bumpy ride, bouncing through an ever-changing narrative explained via cardboard clichés. However, Blizzard provides more of some great characters, the absolute show-stealer being the would-be leader of the Tal’darim faction, Alarak. Alarak’s “ambitiously evil” personality provides a nice foil to the rest of the cast, and witnessing his ruthless style of getting things done is fun. The prologue and core campaign progress predictably, and the three-mission epilogue wraps up major story elements. Dialogue, cinematics, and other story-focused fare await between each and every mission, and watching psi-blade battles never gets old – but the finisher falls flat.

Legacy of the Void brings with it a handful of new units and balance changes for multiplayer that should shake up the competitive scene and keep things interesting for years to come, especially our old Brood War favorite the Lurker. Multiplayer has a smattering of other new fun features. If you’re interested in getting into

competitive StarCraft, automated daily and weekly tournaments are now regularly available and provide additional chances outside of ladder to hone your skills and take on evenly matched opponents. Archon mode puts two players in control of one base, making it perfect for veterans teaching new players how things work – or a cool new way to face off for pros. Multiplayer co-op allows players to essentially play refurbished objective-based missions with a commander dictating abilities and playstyles, and players can level up these commanders and unlock new units and abilities. This mode is great if you’re looking for a multiplayer StarCraft PvP experience and are not interested in competitive play, offering some progression aspects and additional longevity for those that want to play with friends, but not against other players. The system doesn’t have a lot of complexity and depth, but it’s a nice addition to the rest of StarCraft II’s multiplayer suite.

Legacy of the Void is an extremely polished experience packed with features for all styles of players, but the campaign suffers from a muddled, middling narrative and maps that sometimes feel too much alike. Overall, it’s still an impressive experience with powerful protoss style and flavor, a handful of cool levels that play with the genre in unique ways, and a cache of fun multiplayer components come together to create a solid conclusion to one of the most iconic real-time strategy games of all time. » **Daniel Tack**

PC

» Concept

Conclude the StarCraft II trilogy with a protoss-focused expansion

» Graphics

The visuals and unit animations are great, with noteworthy cinematics and stylistic choices that make each protoss faction stand out

» Sound

Plenty of cool quips from an expansive returning cast to round out the zerg screeching and psi-blade humming

» Playability

A difficulty slider allows you full control of the experience, and each standard campaign mission teaches you how to use a new unit type

» Entertainment

The campaign fails to deliver compelling storytelling, but varying faction unit styles and custom call-in abilities add a jolt of life. Multiplayer is better than ever, featuring new units, daily and weekly tournaments for all skill levels, and co-op action

» Replay Value

High





Yo-kai Watch

A worthy Pokémon competitor

8.5

gameformer
SILVER

Style 1-Player Role-Playing Publisher Level-5, Nintendo Developer Level-5 Release November 6 Rating E10+

3DS

» Concept

Take the core tenants of Pokémon and translate them into a different world with a sillier tone and a novel take on combat

» Graphics

Despite some clever creature designs, the overall visual style doesn't distinguish itself

» Sound

None of the music or voice acting is grating or obnoxious (which is a danger in games skewed toward younger players), but nothing stands out as being particularly memorable, either

» Playability

Switching between stylus and button controls is annoying. You can technically pick one control style and stick with it, but playing successfully means switching back and forth. Separately, field movement and touch-screen controls feel great

» Entertainment

Yo-kai Watch has a great sense of humor, unique combat, and collection hooks that sink in quickly

» Replay Value

Moderately High

Yo-kai Watch is a big seller in Japan, and it's easy to see why. The Pokémon comparisons are inevitable; you explore an open world collecting creatures (Yo-kai ghosts) to build your army, and the Yo-kai are capable of evolution as they gain experience. Despite its overlaps with Nintendo's juggernaut franchise, Yo-kai Watch is far from a rip-off.

The titular Yo-kai are ghosts haunting the world unseen by humans. Circumstances allow you to see them where others can't and recruit them to your team to help fight the bad ghosts and retrieve more of the good ones. Exploring a secret world unseen by others and building your small ghost army has a certain charm, and helping them evolve and grow quickly becomes an exciting venture.

Collecting the ghosts involves simply fighting them with the crew you have already amassed. You won't be throwing a Pokéball equivalent, since the creatures randomly decide to become your friends after a battle. The likelihood of them joining you can be increased, however, by feeding enemies Yo-kai health items. I like this style of collection, as it disconnects getting new creatures directly to a specific type of inventory item. You miss out on recruiting that rare Yo-kai from time to time, but you also get

many others without actively trying or expending inventory, which is a worthy trade-off.

The fighting is where Yo-kai sets itself apart not just from Pokémon, but other RPGs in general. It's much more active than your typical turn-based fare, revolving around the use of touchscreen minigames and constant change-ups. The minigames quickly reach a point of repetition, but I still enjoyed the active combat system and found myself constantly on the move during fights – a welcome change from the turn-based fights typically employed by the genre. With a crew of six, three ghosts are always in front sending out attacks, and three are in the back – building up special attacks safe from the enemy. You can rotate among your crew in mid-battle without penalty. As they fight, they charge their special abilities, which prompts one of three minigames when unleashed. The Yo-kai do standard attacks on their own, but the player is rarely inactive. One of your Yo-kai is nearly always ready to throw out a special attack, and on the rare occasion none have a special attack in the hopper, you can direct attacks by assigning pins using the touchscreen, or hand out items to those in need.

Off the battlefield, Yo-kai has a surprising amount in common with

western RPGs, offering an open world where players can collect and complete missions from the assorted citizens alongside the main storyline. Having a collection of side-missions in your inbox is fun and works well with only one noticeable shortcoming – the map is vague, unlabeled, and difficult to use effectively.

Some additional highlights of the world of Yo-kai are its overall humorous tone and ghost design. The protagonist often makes sarcastic jokes, and the citizens of the world have funny dialogue and strange requests throughout. It doesn't take itself too seriously, and I often chuckled at the bizarre situations, like trying to retrieve a pair of underwear from a Yo-kai pig who couldn't be bothered to get out of the bath. A few cute Yo-kai make up the collection, but my favorites are the ghosts who fully embrace the strange. These types of Yo-kai made me want to see and collect more.

Comparing Yo-kai Watch to Pokémon is more than fair as the game borrows from the series that helped establish what has become its own genre, but there's no reason to pick one over the other. Yo-kai Watch is a worthy competitor that stands comfortably next to Nintendo's monster collector as a distinct peer.

» **Kyle Hilliard**





The Room Three

Bending, spinning, and twisting your mind

Style 1-Player Adventure **Publisher** Fireproof Games **Developer** Fireproof Games **Release** November 5 **Rating** 9+

The Room series is a bit of a puzzle box. It revolves around finding objects and the places to put them, and yet it manages to turn that basic concept into something haunting and creepy. The touch interface is incredibly simple, and every moment feels clever and imaginative. It's designed to work on a screen that fits in your hand, but the world is so engrossing that it consumes your senses. The Room Three is composed of several elements that seem like they shouldn't fit together, yet they combine into something truly mesmerizing.

The Room's core concept – manipulating ornate objects – remains a constant delight. The third entry continues to broaden that focus, letting players explore a series of themed rooms as they spin, twist, and pull apart all manner of puzzle cubes

and other exotic clockwork gadgets. The real magic is how many of the objects fold together in ways that almost seem plausible. A small thrill ran through me every time I coaxed a puzzle box open and revealed the key item I knew would unlock something on the other side of the room. The game is one long scavenger hunt, but it's so well paced that it's hard to find a good spot to take a break.

While the first installment took place almost entirely inside a single room, the third entry sprawls across a series of rooms connected by a central hub. The occasional bit of backtracking can be a pain, and so can hunting for the next object to manipulate. Thankfully, the hint system is forgiving, and its tiered structure does a great job of pointing you in the right direction before completely spoiling the puzzle solution.

The only new gimmick is an eye-piece that allows you find doorways into mouse-sized environments that hold additional puzzles and objects. While this mechanic is conceptually interesting, in practice it only allows puzzles to be nested in different layers of the environment. It doesn't change the overall gameplay or strategy at all.

While I've always appreciated The Room's haunting atmosphere, I've never understood its narrative. The third entry tries harder by sprinkling in a series of letters written by a mysterious figure known as the Craftsman, which hint at the secrets of an unseen world and a mysterious element called the Null. However, even after finishing, I had trouble understanding its story without a refresher. The thin narrative isn't memorable, but that makes it easy for newcomers to jump right in without playing the previous entries.

Even without a plot to drive them, The Room games have always pulled me into their world. The Room Three is full of interesting moments that will have you stoking the fires of a forge to melt gold into a series of unique keys, manipulating mechanical animals to reveal their hidden compartments, and using a giant telescope to discover the secrets in the stars. It feels less like an emulation of a puzzle box and more like a traditional adventure game, but Fireproof Games hasn't lost touch with what makes this series exciting: a rich atmosphere and a series of clever puzzles. » **Ben Reeves**

8

iOS

» **Concept**
Another creepy exploration of puzzle rooms that makes great use of the touch interface

» **Graphics**
The Room games have always looked great, and this entry adds even more intricate objects and rooms

» **Sound**
The soundtrack is subtle, but adds greatly to the atmosphere. You should definitely play with headphones

» **Playability**
Puzzles are all about matching items to the environment, and all the object manipulation is done through simple touch controls

» **Entertainment**
Perfect in bite-sized sessions or one long marathon, The Room Three is engrossing and hard to put down

» **Replay Value**
Moderately High





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Corey / TN

What is your all-time favorite game and why?

Legend of Dragon (PS1) actually changed me as a gamer. I used to only play sports games until my mom bought it for me for Christmas. I was actually really upset about it until I gave it a chance and instantly fell in love.

Who is your gamer crush?

I love me some Rikku (FFX). Her style, attitude, and loyalty make her an ideal catch!

What impact on gaming do you see Virtual Reality having?

I'm hoping it takes gaming to the next level. As gamers we're always asking "What's Next?" and I think this could be the next step to not only open new worlds, but to put us ON them.

Luke Skywalker or Han Solo?

Is this even a question???? Look at Han's best friend, girl and ride. Case closed.

What's the best thing about being a member of the GameStop family?

It's definitely the people. I have met some of my closest friends on both sides of the counter. It's my job to make every person that walks through my doors feel like family, and by doing so I've met people who became part of mine. We know most of our customers by first name and have their PowerUp Rewards accounts pulled up by the time they get to the counter. We're just one big, happy, gaming family.

ASSOCIATE SPOTLIGHT

Eli and Asa / TN

What is your all-time favorite game and why?

Eli - *Star Wars*™ Battlefront 2 because it is a *Star Wars*™ game that my brother and I can play together.

Asa - *Destiny* because it brought a new type of gaming into our lives.

What new game are you most excited for and why?

We are both equally excited for *Star Wars*™ Battlefront!

Best moment of your gaming career?

Eli - Beating Halo 2 Anniversary on Legendary.

Asa - Accidental 360 no-scope on Halo Flood.

Do you have any bizarre gaming rituals?

We both HAVE to use our own special controller.

What's the best thing about being a GameStop customer?

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Destiny: The Taken King	9.5	Nov-15	
Disgaea 5: Alliance of Vengeance	8.5	Nov-15	
Dragon Quest Heroes: The World Tree's Woe and the Blight Below	8	Nov-15	
FIFA 16	8.75	Nov-15	
Guitar Hero Live	7.5	Dec-15	
Lego Dimensions	8.75	Nov-15	
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	
NBA 2K16	9	Dec-15	
NBA Live 16	6.5	Dec-15	
Pro Evolution Soccer 2016	9	Nov-15	
Rock Band 4	8.75	Nov-15	
Tales of Zestiria	6.5	Dec-15	
Tony Hawk's Pro Skater 5	6.5	Dec-15	
Transformers: Devastation	8	Dec-15	

XBOX ONE			
Assassin's Creed Syndicate	9	Dec-15	

Call of Duty: Black Ops III	9	Dec-15	
Destiny: The Taken King	9.5	Nov-15	
FIFA 16	8.75	Nov-15	
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Halo 5	8.75	Dec-15	
Lego Dimensions	8.75	Nov-15	
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Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	
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PLAYSTATION 3			
Destiny: The Taken King	9.5	Nov-15	
Guitar Hero Live	7.5	Dec-15	
Lego Dimensions	8.75	Nov-15	
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	
Tales of Zestiria	6.5	Dec-15	

XBOX 360			
Destiny: The Taken King	9.5	Nov-15	
Guitar Hero Live	7.5	Dec-15	
Lego Dimensions	8.75	Nov-15	
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	

Wii U			
Fatal Frame: Maiden of the Black Water	5.5	Dec-15	
Yoshi's Woolly World	8.5	Dec-15	
Guitar Hero Live	7.5	Dec-15	
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	
Lego Dimensions	8.75	Nov-15	

PC			
Armikrog	4	Dec-15	
Beginner's Guide, The	8	Dec-15	
Call of Duty: Black Ops III	9	Dec-15	
Civilization: Beyond Earth – Rising Tide	9	Dec-15	
FIFA 16	8.75	Nov-15	

Hearthstone: The Grand Tournament	9	Nov-15	
Might & Magic Heroes VII	7	Dec-15	
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	
NBA 2K16	9	Dec-15	
Prison Architect	8	Dec-15	
Pro Evolution Soccer 2016	9	Nov-15	
Undertale	9.5	Dec-15	

3DS			
Chibi-Robo! Zip Lash	7	Dec-15	
Legend of Zelda: Tri Force Heroes, The	7.25	Dec-15	

VITA			
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	

iOS			
Hearthstone: The Grand Tournament	9	Nov-15	
Minecraft: Story Mode – Episode 1: The Order of the Stone	8.25	Dec-15	

8 | Tales From The Borderlands: Episode 5 – The Vault Of The Traveler

Platform PS4 • Xbox One • PS3 • 360 • PC • Mac • iOS • Android **Release** October 20 **Rating** M

Characters say their goodbyes and discuss what's next, allowing their personalities to shine one more time. The ending – and the fifth episode in general – reminded me why fans still like Telltale's adventures so much. – Jeff Marchiafava

7.75 | Cibebe

Platform PC • Mac **Release** November 2 **Rating** N/A

Cibebe is an honest look at Internet communication, love, and sex. The tale is highly personal, but it evokes an eerie feeling of déjà vu. You've probably had a similar experience or know someone who has formed a bond this way. – Kimberley Wallace

6 | WRC 5

Platform PS4 • Xbox One • PS3 • 360 • Vita • PC **Release** November 17 **Rating** E

A rally game focused solely on the sport is a rare thing, and it's an opportunity to dive into this type of racing and concentrate on what makes it special. While WRC 5 offers a decent experience, it lacks bite or any distinguishing characteristics. – Matthew Kato

6.25 | WWE 2K16

Platform PS4 • Xbox One • PS3 • 360 **Release** October 27 **Rating** T

Reliving Steve Austin's career will likely appeal to a lot of wrestling fans, but it's more fun to watch than to play. WWE's live-action video packages remain some of the series' best content, but if you just want to watch a bunch of historical matches there are plenty of other, stress-free ways to access most of that content. – Ben Reeves

7.5 | Game Of Thrones: Episode 6 – The Ice Dragon

Platform PS4 • Xbox One • PS3 • 360 • PC • Mac • iOS • Android **Release** November 17 **Rating** M

With most of the characters' arcs left on cliffhanger moments, we won't know exactly how big our decisions are until Telltale shows us what happens next. Since this tale is set between two seasons of HBO's show, I was expecting a more definitive ending, but the lack of resolution doesn't hurt the experience. – Andrew Reiner

6.75 | Mario Tennis Ultra Smash

Platform Wii U **Release** November 20 **Rating** E

Hitting a ball back and forth has been a fun video game pastime time since the medium's inception, and responding to your opponent's volley with the appropriate attack and pulling off powerful Ultra Smashes and jump shots is fun. I just wanted more reasons to keep playing. – Kyle Hilliard

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Student work by: John Rogeles & George Stoll





Answers: 1-a, 2-c, 3-b, 4-d, 5-d, 6-d, 7-d, 8-all of the above

VR Quiz

Think you know your realities? Can you spot the differences between virtual and physical worlds? Did you read *any* of this month's cover story? Take our quiz to see how your knowledge stacks up! **by Jeff Cork**

- What should users call the ring-shaped indentation that ill-fitting VR goggles can leave on the face?
 - VRaccoon Mask
 - Oculus Dent
 - The Virtual Bandit
 - Red Ring of (Social) Death
- How cool do you look when you're wearing a VR headset?
 - The coolest
 - Not so cool
 - Like that *Time Magazine* cover, only it's you
 - Where you're going, mirrors don't work so who cares?
- You're approaching a person deeply immersed in a VR experience. What is the appropriate level of contact?
 - A light tap on the shoulder
 - Compromising pictures and "kick me" signs
 - Neck lick
 - The ol' "Pencil Up the Nose"
- Facebook bought Oculus for \$2 billion. What on Earth were they thinking?
 - Political memes will be even more persuasive in VR
 - Star Wars was taken
 - Have you ever ignored a friend request from someone you kind of knew in high school... IN IMMERSIVE 3D?!
 - It's complicated
- What should you do if you feel nauseated in the middle of a VR session?
 - Consult your device's manual. Each manufacturer has its own recommendations
 - Take the headset off and make sure your PC or device meets the minimum hardware specifications
 - Turn off and remove the headset, and then let your eyes relax
 - Keep playing until you have to tear off the headset and fill it with all of your barf
- What's the biggest unknown facing virtual reality at this point?
 - Will people spend hundreds of dollars on technology that's still missing a killer app?
 - Are there any long-term health effects from using VR?
 - With so many headsets in this new space, is the market already too fragmented to gain critical mass?
 - Did someone just lick my neck? Seriously?!
- What virtual-reality game are you most excited about?
 - You're The Sport Guy
 - GunDudes Comin' At Ya
 - Roller Coaster: The Sickening
 - Where Are My Legs?
- Virtual reality isn't just for those darned video games. What are some other applications for the technology? (Circle all that apply)
 - Providing a way for shoppers to try on clothing before going to a store
 - Offering new ways to teach difficult-to-grasp subjects in classrooms
 - Reconnecting long-lost friends/family members in virtual spaces
 - National parks could use it to give families who can't travel a chance to experience sights such as the Grand Canyon ♦

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